Safety Maintenance

EST. 1901 • AMERICA'S PIONEER MAGAZINE IN ITS FIELD • DECEMBER, 1958 • 50¢
Published By Alfred M. Best Company, Inc.

Protective Clothing
SILVABESTOS†
American Optical makes a complete line of Silvabestos Protective Clothing in gloves and mittens, coats, pants, sleeves, hoods, coveralls and overalls, cape sleeves, bibs and aprons, leggings and spats. Gloves and mittens have wool liners for added insulation. Your nearest AO Safety Products Representative can supply you.

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For Light Weight, Long Wear Protection . . .

AO SILVABESTOS† CLOTHING

Here's American Optical's new line of improved coated asbestos clothing which offers unusual abrasion resistance, lightweight, flexibility and comfort, and a heat reflection of about 40%. It is designed for operations where the high radiant heat reflectivity of our aluminized line is not required.

Abrasion tests of AO Silvabestos show increased wear resistance up to 168 per cent over conventional asbestos of heavier weight — an advantage of particular importance in gloves. What's more, Silvabestos clothing has superior tensile strength and stronger seams and does not readily absorb oil and grease.

Workers will appreciate the lighter weight of this clothing which minimizes fatigue and makes for greater efficiency on the job.

Recommended uses: Open hearth operations, heat treating, exposure to molten metal and similar exposures. (Should not be used in contact with open flame.)

Always insist on AO Trademarked Safety Products

American Optical
COMPANY
SAFETY PRODUCTS DIVISION

SOUTHBRIDGE, MASSACHUSETTS
Branches in Principal Cities

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(For details, use Key # Y-1 on card on page 1)

BULLETINS & CATALOGS

As a convenience to executives, these new publications of manufacturers are offered by the Reader Service Department of SAFETY MAINTENANCE. To obtain copies write in the key numbers on the free-postage card below.

PERSONAL PROTECTION

Disposable Paper Clothing 284
The Olympic Glove Co., Inc. Pamphlet highlights a new line of disposable paper clothing that is suited to application in chemical and atomic laboratories where contamination is a major hazard. Material is durable, fire retardant, liquid repellent and lightweight. Aprons, coats, pants and jackets are available.

New Strap Suspension for Safety Hats 285
Willson Products Div., Ray-O-Vac Co. Brochure announces the availability of a new strap suspension for safety hats. New suspension effectively protects workers from impact shock. Strap design dissipates shock waves to protect brain against serious concussion.

Safety Equipment Catalog 286
United States Safety Service Co. Comprehensive catalog illustrates a complete line of personal safety equipment. The company's new research, production, and prescription laboratory facilities are also featured.

MAINTENANCE

Maintenance of Smooth Surface Flooring 287
Building Research Institute. Information chart developed at the B. R. I. Conference on Flooring summarizes the various properties of asphalt, vinyl, rubber, linoleum and cork flooring. Cost, use and physical characteristics of the various types are spotlighted. A convenient guide to Federal specifications for smooth surface flooring is included for handy reference.

Efficient Floor Care 288
Masury-Young Co. Leading safety authorities claim that slips and falls account for most of the disability injuries incurred in our country. 32 page booklet offers valuable suggestions as to how proper floor care can reduce slip and fall accidents. Proper maintenance also aids in reducing flooring costs. Recommendations for the care of asphalt, rubber, vinyl, cork tile, wood, concrete, terrazzo and marble floors are included.

Ice Melting Chemicals 289
Speco, Inc. Bulletin describes a complete line of ice melting chemicals. Chemicals are recommended for large scale industrial use where greater bulk per pound results in substantial costs savings.

Fiberglass for Metal Building Insulation 290
Owens-Corning Fiberglas Corp. New publication illustrates the use of "Fiberglas," flexible and rigid, metal building insulations. Heat losses and condensation and accessory materials for buildings such as plastic paneling, ceiling board, acoustical tile and perimeter, pipe and duct insulation are discussed.

INDUSTRIAL HYGIENE

Inhalation Therapy Equipment .. 291
National Cylinder Gas Div., Chemetron Corp. Additions to this company's line of medical inhalation therapy equipment are discussed in three new bulletins. New Equipment includes an intermittent vacuum regulator, oxygen tents and pumps, and a "Ventaling," inhalator to be used with either piped or cylinder oxygen. Equipment should prove useful in industrial clinics, wherever inhalators and related equipment are necessary to save lives.

Permanent Salt Tablet Dispenser . 292
Mine Safety Appliances Co. Specifications sheet illustrates the application of a new salt tablet dispenser. Designed for permanent location, the plastic unit may be locked in position to prevent tampering. Dispensers are factory sealed to keep out dust and moisture.

Safety Controls for Fume Hoods 293
Laboratory Furniture Co., Inc. Booklet describes a new set of "3-Way" safety sash controls for laboratory fume hoods. Controls enable technicians to use fume hoods without the use of hands. A convenient foot switch opens the sash as operator approaches. Keeps hands free for experiments, etc.

Rest-Room Sanitation 294
Horizon Industries. New literature introduces a toilet disinfectant in tablet form, which is said to be more effective than phenol in destroying bacteria. Tablet is easy to use and kills germ-carrying bacteria in 30 seconds. Tablet can also be used to remove rust and lime deposits.

FIRE PROTECTION

Wheeled Fire Extinguisher 295
Walter Kidde & Co., Inc. Colorful, six-page brochure introduces a new 200-lb. pressurized, dry chemical, wheeled, fire extinguisher. Operational and maintenance features of the new unit are outlined. Unit is light in weight, compact, easy to maneuver and uses no heavy gas cylinder.

Lightning Protection 296
Lightning Protection Institute. The unpredictable antics of lightning and how to protect life and property against its destructive force are described in a new booket, "Lightning Facts and Figures." Of particular interest to safety men should be a section dealing with personal safety rules for electrical storms as well as a chapter dealing with violators of lightning protection sales ethics.

(Continued on the next page)

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December, 1958 **Please send me the following free data**

Free Bulletins (Cont'd)

MISCELLANEOUS

Circular Saw Protection 297
Brett-Guard Corp. A new safety wall chart shows how operators can use circular saws with added safety and protection. Such operations as mitering, cross cutting and ripping are discussed and protection in such "unguardable operations" as rabbeting, tenoning, dadoing, plowing and tonguing, etc. are demonstrated.

Hydraulic Cutting Tools 298
Manco Mfg. Co. 70-page brochure catalogs special purpose high thrust hydraulic cutting tools. Book is divided into nine sections to deal with such general types of material to be cut as wire and rods, steel billet, strips, bars and tubing, etc. Sections on fabricating and auxiliary power equipment are also included. Manual and electrical controls are discussed and thrust data charts are included for easy reference.

Ammeters 299
Columbia Electric Mfg. Co. 8-page bulletin illustrates new instruments and gives detailed information on the selection, ordering and use of Tong Test Ammeters. These ammeters measure both AC and DC voltage. Special tests for low current readings are also included.

Slide Selector for Gages and Valves 300
Jerguson Gage & Valve Co. New Slide Selector helps choose the correct size and type of liquid level gage and valve for any job. Chart gives size numbers, visible glass and center-to-center connections for all types of gages in all types and pressure groups. Graphs and illustrations are included.

Magnetic Grip Shields 301
The Dilley Mfg. Co. New brochure describes the many uses and economies resulting from the use of this plastic guarding device. Unit can be attached to any type machine. Unit incorporates a magnet which grips to any metal surface. A new section highlights special unique applications.

What's YOUR Problem?

- **Has an accident or fire interrupted production?**
- **Want to know how to prevent it?**
- **Do you need background information on equipment for industrial safety, hygiene, or maintenance?**

As a service to its readers, "Safety Maintenance" will arrange to supply manufacturers literature on the following subjects. Just insert the key number on the Reader's Inquiry Card on the preceding page and be sure to fill in your name and address. If you need information on a specific type of product, simply write it in on the Inquiry Card.

Key Number	Subject
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101	Safety Goggles
102	Face Shields
103	Lens Cleaning & Anti-Fogging Equipment
104	Sweat Band
105	Hard Hats
106	Respirators & Masks
107	Protective Clothing
108	Women's Protective Clothing
109	Safety Belts
110	Safety Gloves
112	Anti-Slip Soles
113	Oil Resistant Soles
114	Welding Helmets
115	Welding Curtains
116	Ice Grippers
117	Safety Shoes
118	Safety Boots
	FIRST AID AND HYGIENE
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121	Skin Cleansers
122	Sanitary Drinking Facilities
123	Athlete's Foot Control
124	Salt Tablets
126	Antiseptic Medication
127	Burn Medication
128	First Aid Kits & Supplies
129	Stretchers & Litters
130	Throat Medication
131	Eye Wash Fountains
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133	Disinfectant—Deodorants
134	Hearing Testers
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136	Noise Analysis
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176	Fork Truck Steering Aid
177	Plastic Acid-Containers
177A	Carboy Pumps
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178	Machine Guards
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183	Machine Tool Cutter Guard
	EDUCATIONAL AIDS
191	Safety Signs
192	Safety Awards & Emblems
193	Employee Safety Guide
194	Bulletin Boards
195	Eye Safety Film

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Safety Maintenance

formerly "SAFETY ENGINEERING"

Volume 116, Number 6 **December, 1958**

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AMERICA'S PIONEER MAGAZINE IN ITS FIELD

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it's SAFE to say

● BEND THE TWIG

In this day of rampant juvenile delinquency, it is refreshing to know that vocational and secondary schools are attempting to build character and a decent regard for the rights of others.

It is axiomatic that only the offenders who find themselves in the clutches of the law are given the spotlight of publicity. The overwhelming majority of teenagers have their fun in the manner of young ladies and gentlemen whose parents and teachers need not experience a soul-sickening sense of shame . . . those youngsters make no headlines, thank heaven! If we concentrate on the seamy minority we can find much evidence of youthful depravity—too much—but the fact remains that a tremendous job is being done in our homes and schools to cope with delinquency.

The problem has its accident prevention aspects as well as factors of morality. In fact, accident prevention is a form of morality. And it is here that the public school system can inculcate a proper evaluation of human life, not only in the matter of traffic safety but protection against work injuries as well.

Vocational school instructors who approach their job as molders of future viewpoint can be considered unsung heroes. Fortunately, their number is legion. They demonstrate true leadership by interesting themselves in guiding hot-rodders against suicidal and homicidal tendencies on the highways and equally important, they direct their young charges along the path of greater industrial safety.

It will be argued that teachers are not safety engineers. They can be. What better time to emphasize freedom from industrial injury than when dealing with the sponge-like minds of impressionable youth in some vocational school?

It is bad enough to contemplate a lost eye in an industrial plant. Is it not at least equally tragic to see a youngster blinded or maimed because rudimentary accident prevention was not taught in a school shop?

It would seem that safety directors in their respective communities would have a golden opportunity to demonstrate their own leadership by interesting themselves actively in vocational school safety. Certainly the school authorities would welcome such guidance and the harassed instructors would be given encouragement to bear down heavily on safe practices when they know that the last word is coming straight from the horse's mouth.

High school and college laboratories as well as school shops can be a breeding-ground for ghastly accidents. Men whose daily lives are dedicated to accident prevention, fire control and industrial health conservation (and those are the readers of SAFETY MAINTENANCE) can perform no greater community service than to devote a few hours each month working with school authorities and the youngsters themselves in bringing industry's findings to the school doorstep. Our industrial growth will depend upon those taking the place of oldsters and school authorities who turn their backs on safety training or, at best give only lip service, are remiss in their community duty.

Present-day emphasis upon developing future scientists and industrial leaders will avail us very little unless those potential leaders are permitted to live long enough to achieve our national goal.

True safety is not only an expression of self-preservation but reflects consideration for others. To combat juvenile delinquency and thus mold good citizenship, the industrial world and particularly safety directors can provide a potent weapon to the educational systems and the home itself.

SEE THE 1959 NATIONAL PLANT MAINTENANCE & ENGINEERING SHOW *and Conference*

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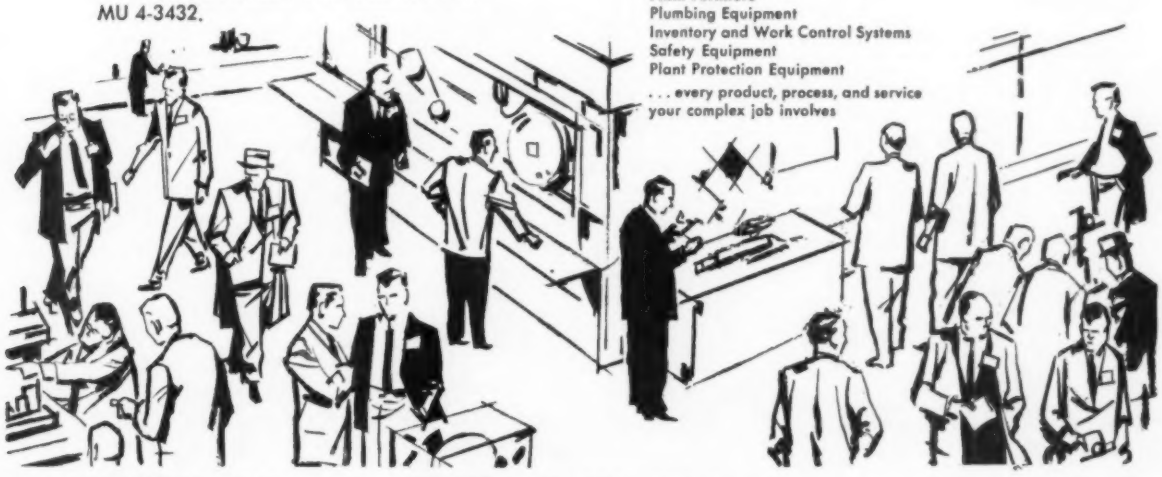

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the future shows

New York, N. Y. *December 7–9*

Annual Meeting of The Material Handling Institute, Inc. (Roosevelt Hotel). Hanson & Shea, Inc. (Trade Association Management), One Gateway Center, Pittsburgh 22, Pa.

Cleveland, Ohio *January 26–29*

Tenth Plant Maintenance & Engineering Show and Conference (Public Auditorium). Clapp & Poliak, Inc., exposition management, 341 Madison Ave., New York 17, N. Y.

Los Angeles, Calif. *February 5–6*

Ninth Annual California Statewide Meeting of the Governor's Industrial Safety Conference (Biltmore Hotel). Michael Flagg, Conference Coordinator, Dept. of Industrial Relations, 965 Mission St., Room 400, San Francisco, Calif.

Ashville, N. C. *March 1–3*

Twentieth Annual Southern Safety Conference and Exposition (Battery Park and George Vanderbilt Hotels), W. L. Groth, Executive Director, P. O. Box 8927, Richmond 25, Va.

Philadelphia, Pa. *March 4–5*

Twenty-Fifth Annual Regional Safety & Fire Conference and Exhibit (Bellevue-Stratford Hotel). Harry H. Verdier, Executive Director, Safety Council, Chamber of Commerce of Greater Philadelphia, 121 S. Broad St., Philedalphia 7, Pa.

Boston, Mass. *March 16–17*

Thirty-eighth Annual Massachusetts Safety Conference and Exhibit (Hotel Statler Hilton). Bruce Campbell, Manager, Massachusetts Safety Council, 54 Devonshire St., Boston 9, Mass.

Fort Wayne, Ind. *March 17–18*

Northeastern Indiana Safety Conference & Exhibit. Ivan A. Martin, Manager, Safety Council, Chamber of Commerce of Fort Wayne, Ft. Wayne 2, Ind.

Los Angeles, Calif. *March 23–25*

Sixth Annual Western Safety Congress & Exhibits (Ambassador Hotel). Greater Los Angeles Safety Council, 3388 W. 8th St., Los Angeles 5, Calif.

Cleveland, Ohio *April 6–10*

Nuclear Congress and Atom Fair, sponsored by International Atomic Exposition, Inc., Architects Bldg., Philadelphia 3, Pa.

Chicago, Ill. *September 21–25*

Fourteenth Annual Instrument-Automation Conference & Exhibit, (International Amphitheatre). Fred J. Tabery, 3443 S. Hill St., Los Angeles 7, Calif.

New York, N. Y *April 13–17*

Twenty-ninth Annual Greater New York Safety Convention and Exposition (Hotel Statler). Greater New York Safety Council, Inc., 60 East 42nd St., New York 17, N. Y.

Syracuse, N. Y. *April 20–22*

Sixth Biennial Central New York Safety Conference and Exposition (Hotel Syracuse). Newell C. Townsend, Administrative Secretary, Central New York Chapter A.S.S.E., 351 S. Warren St., Syracuse 2, N. Y.

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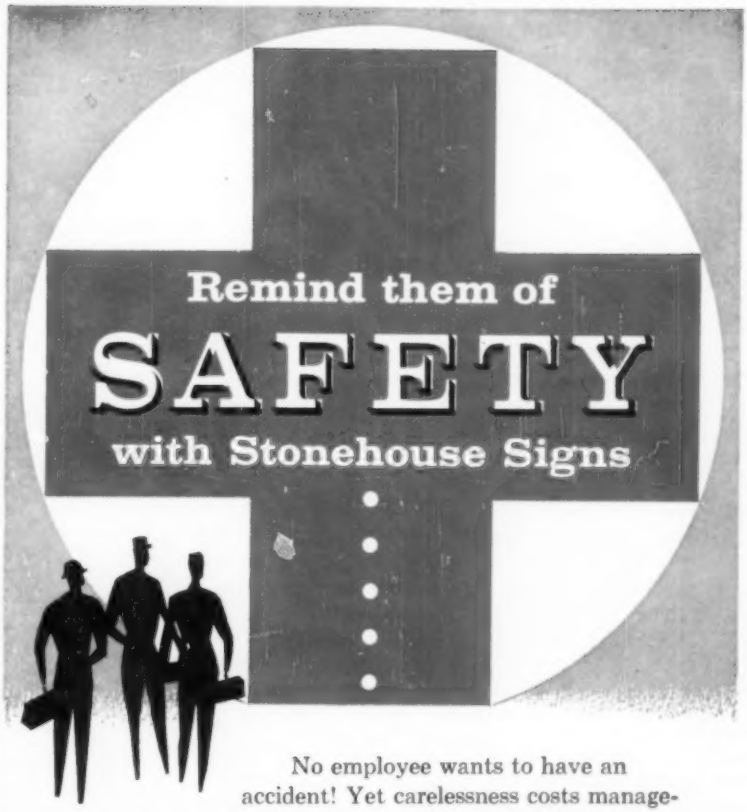

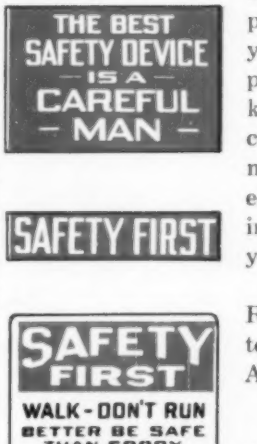

No employee wants to have an accident! Yet carelessness costs management and labor thousands of days of production and millions of dollars each year. Frequent reminders—particularly in places where accidents can easily happen—keep employees alert to danger and cut costly accidents. These reminders, made often and inexpensively by bright, easy-to-read signs, are an important step in an effective safety program for your company.

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IMPROVED Sound-Level Range — Direct reading from 24 to 150 db.

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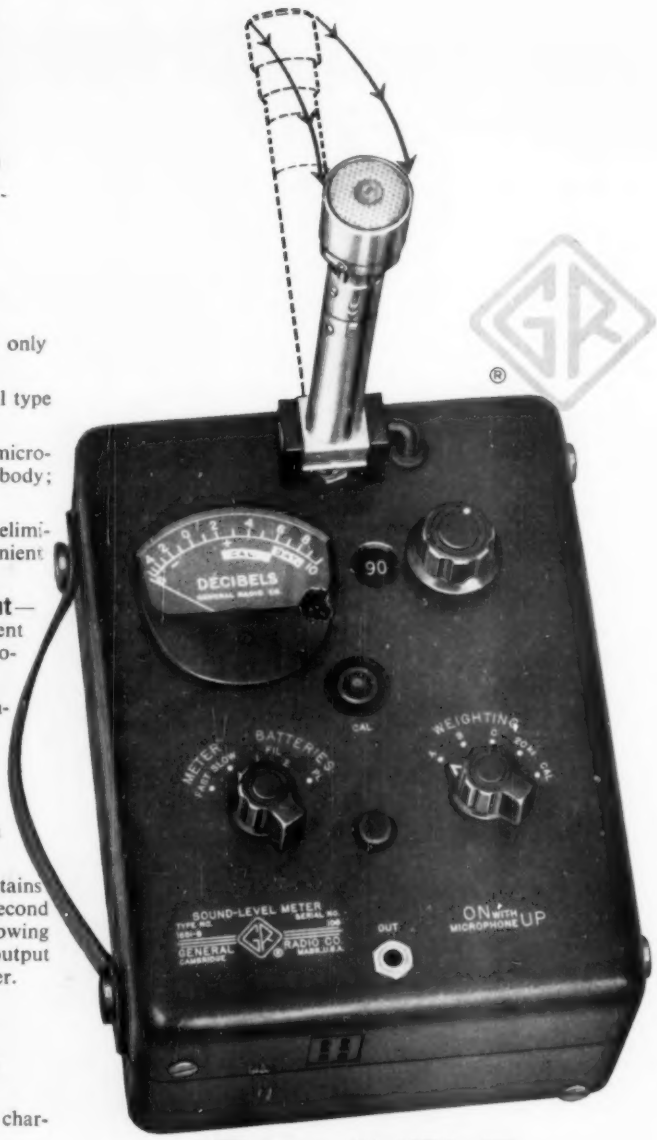

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- **Sound-Level Calibrator** for establishing overall sensitivity from Sound-Level-Meter microphone to indicating meter.
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WHAT'S THE TIME BY YOUR ACCIDENT CLOCK?

Why accidents are likely at certain times of day —

Using a hidden candid camera technique, the safety director of a Los Angeles manufacturer of major aircraft components and systems has proved a theory that the frequency rate of accidents goes up during specific hours of the day, and thus warned his employees of the danger of personal injury during those periods.

Harold Hemphill, safety director for the Los Angeles AiResearch Mfg. Division of The Garrett Corporation, maintained records of the time accidents occurred over a three-year period. Selecting 40 accidents arbitrarily from his records, a survey revealed the following frequency rates:

First Hour—	**6 accidents**
Second Hour—	**3 "**
Third Hour—	**10 "**
Fourth Hour—lunch	
Fifth Hour—	**5 accidents**
Sixth Hour—	**8 "**
Seventh Hour—	**6 "**
Eighth Hour—	**2 "**

To dramatize this vital information that safety is no accident but rather a conscious state of mind which should guide employees to use their common sense and experience to know when and where an accident may lurk, Hemphill concealed a camera 45 feet away from a veteran employee and recorded his reactions throughout one day. He selected as his subject an employee whose job did not require the wearing of safety goggles so that the camera's telephoto lens could pick up the changing expressions of the whole face during the work period.

The accompanying photos of Rex Birdsong, seven-year employee in the mills section of AiResearch, were taken without his knowledge to show the correlation between his reactions and the known times when AiResearch safety records showed accident rates at their peak.

FIRST HOUR: Accident rate is high. Rex shows effects of bucking traffic coming to work. Tense, nervous, he unsafely takes his eyes off his work.

SECOND HOUR: Accident rate drops. Excitement of coming to work has worn off, but Rex is fresh, alert, settles down to the routine of day's work.

THIRD HOUR: Accident rate jumps to its highest peak. Pre-lunch fatigue begins to show. Rex's thoughts stray, increasing the possibility of an accident.

FIFTH HOUR: Accident rate dips. The fourth hour lunch break has been refreshing and Rex will remain alert for a while. But fatigue will appear later.

SIXTH HOUR: Accident rate hits second highest peak. Wisely, Rex relaxes during coffee break. He is tired and therefore more accident-prone.

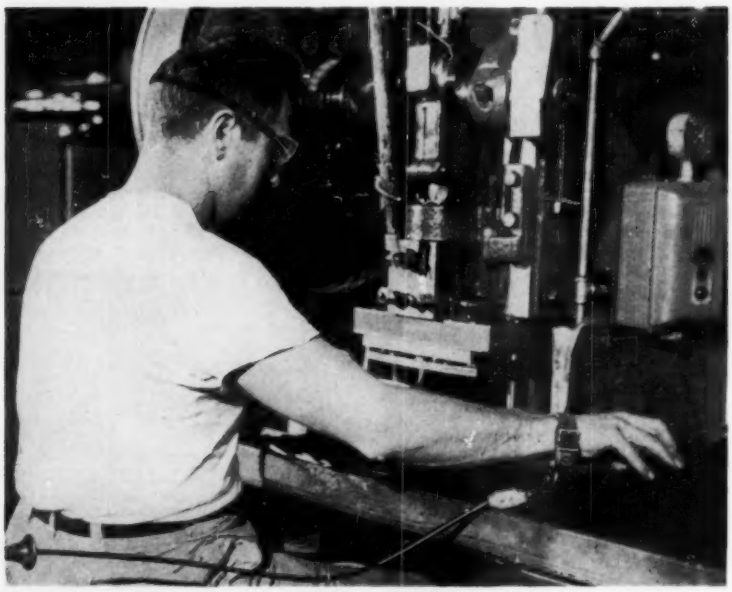
SEVENTH HOUR: Accident rate remains high. Rex shows effects of fatigue and not alert to hazards of job. In eighth hour the accident rate goes down.

TOLD of candid camera, Rex agrees to publication of pictures to help others realize the periods they must increase their own guard against accidents.

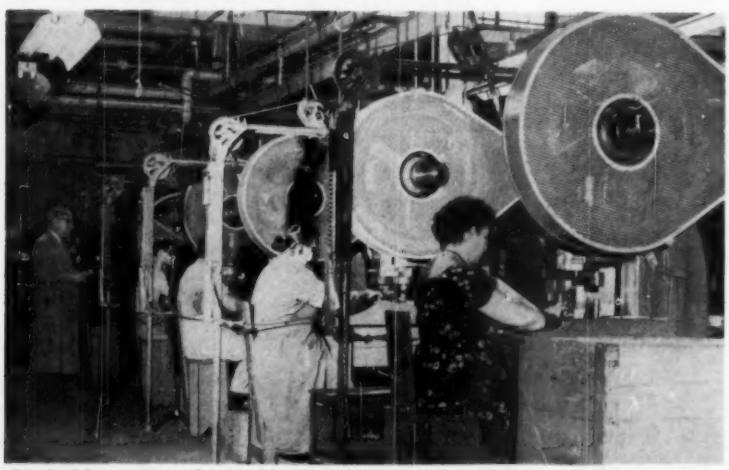
The KEY To a Guard Program Is — FOLLOW-THROUGH

Management may have to be sold on the idea of providing machine guards, but employees also have to be sold on using them. How does one go about it?

As a starter, let me show you how NOT to get employee cooperation, based on some of my own experiences. Several years ago I was hired as safety director for a firm that utilized a number of power presses. The former safety director agreed to stay on for a week to show me around and introduce me to all the supervisors and foremen. The first day was spent in the Safety Office going over the accident reports and frequency and severity figures for the previous two years. The accident rates were very bad and I began to wonder what I was getting myself into.



Pull-out guard for power press utilizes wristlets and cords to pull operators' hands away from the dangerous area of the die when the ram descends.

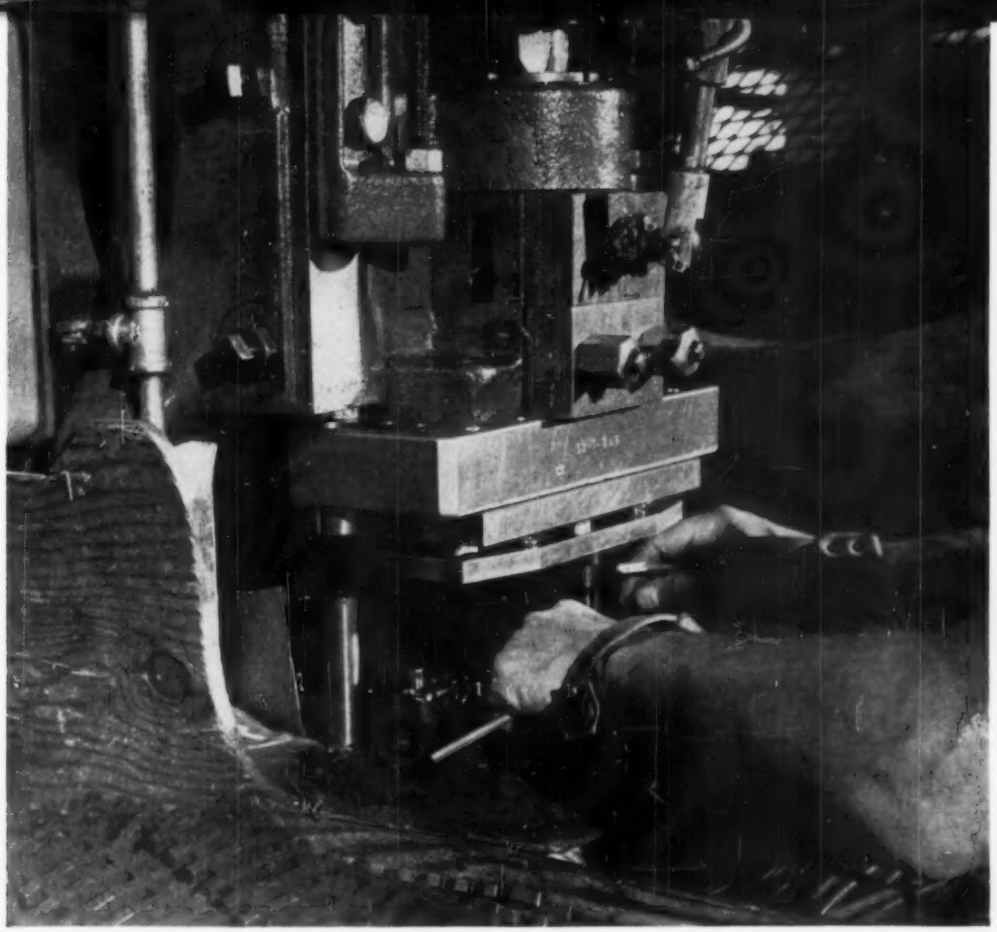


Of vital importance for its functioning is the safe maintenance of the machine guard. Foremen and die setters must continually check its safe operation.

The following morning we started out on an inspection of the plant and went into a sub-assembly department that had 75 foot presses and over 200 employees. The second press from the door was being operated without a guard. The safety director looked around and saw the foreman at the other end of the department. He called to the foreman and started ripping him apart about the missing guard before the foreman was half way down the department. Of course everybody stopped working and enjoyed the lacing the foreman was getting . . . everybody, that is, except the foreman. The same thing happened in several other departments that we toured. It was perfectly clear, now, why the safety director had not been getting the cooperation of foremen and why the company had such a poor safety record.

The following week I was on my own and started out on a plant inspection. There was that same press with no guard. I looked around for the foreman and saw him at the other end of the department. I walked down to him and said, "Are you Pat, the forman of this department?" and he said, "Yes, Mr. Herrmann." I said, "The name is George, and I would like to talk to you at your desk."

I told him foot press #41 was being operated without a guard and would he please stop the job and have the guard placed on the press. He said he would take care of it right away. About two hours later I returned to the department



and the guard was on the press. I looked up the foreman and thanked him for his cooperation. He was dumbfounded. This never had happened before.

The same procedure was used throughout the plant, and in the first month on the job, all the foremen were on my team because I treated them as supervisors and as human beings.

At the Lionel Corporation on Monday mornings my secretary has a breakdown of first aid cases for the past week which were taken care of in our clinic. These are listed by department, type of injury, cause of injury, mechanical or non-mechanical.

The foreman also receives a similar report and when I reach his department, I don't raise hell about the number of first aid cases his department had for the week; instead we discuss the report and endeavor to find the cause for—we'll say—a lot of splinters or small lacerations.

MACHINE GUARD SERIES
other articles Jan. and Feb.

by **GEORGE HERRMANN**
Safety Director
The Lionel Corporation
Irvington, N. J.

Together, we usually find the cause and correct the situation.

There is a human element in follow-through. Every individual has his weak points, his strong points and peculiarities all his own. You must know the main avenues of approach to him, otherwise you cannot get through for follow-through. However, remember above all that there is one human trait all men have and that trait is personal dignity.

Enforcing Guard Rules

The policy of our company is to eliminate hazards as far as possible by guarding dangerous parts of machines and installing other suitable types of safety devices.

Safety devices make work easier because they eliminate the need for a lot of thought and effort to avoid unprotected hazards. Unfortunately, some employees overestimate their ability to do their work safely. They remove guards and tamper with safety devices, making them ineffective. Eventually the result is a permanent disability, but we don't wait for the accident to happen.

We have very strict rules and regulations regarding guards and safety devices.

Each machine has a notice which reads, as follows:

In case of a power failure, machines are to be shut off.

When power is restored, the operator should start the machine and trip it once before starting to work.

Employees are not allowed to work on any press without a guard —or with a defective guard. Doing so is a violation of Safety Rules and will subject you to discharge.

The employee has a right to refuse to work on a machine with no guard or a defective guard and by the same token we hold him or

her responsible for the safe operation of the machine. This eliminates the tinkering with guards. The foreman or setup man are the only ones who can change or adjust a guard. In the case of a broken guard the safety department is notified, and a repair order is issued to the machine shop for immediate repair. In the meantime, the machine is shut down until repairs are made.

Do Safety Repairs

We have two men from the maintenance machine shop who are classified as Machine Safety and Maintenance Men and are in one labor grade higher than machine maintenance. With this higher labor grade we get better men and the same two do all the safety repairs. It is also their job to inspect all machines and guards once every week and check off the inspection tag that is attached to each machine.

You may be wondering how the union fits into the picture. We have the CIO-IUE in our plant and they are a very strong union.

Eleven years ago our company had such a bad safety record it was called a butcher shop. The average was around 45 fingers a year. We called a meeting with the union and discussed the problem with them. The union complained about the antiquated guards on the presses and we complained about the guards on the floor instead of on the machines.

We agreed to install new type guards, the best that could be obtained regardless of cost and insisted that new rules and regulations with teeth in them be enforced throughout the plant.

All Factors Considered

In purchasing and installing new guards we were not looking for safety alone, but considered the employee who had to use these guards and also production. If the Safety Department could install a guard that was safe and increase production, you have top management and the foremen on your side. On the other hand if the employee has confidence in the guard, it increases his or her production which means more incentive pay.

It is very simple to install a guard on a machine and say to yourself—well that covers the law —without considering the employee or production.

Two Accomplishments

Let's take a Milford riveting machine for example. It would be very simple to install a two-hand switch and the machine would be guarded. Here we have a machine which rivets two small parts together. Without any guard the operator produces 1100 pieces per hour which includes 30% incentive. If we installed a two hand micro guard we would cut down production 40% plus the fatigue factor on the operator. By a careful study of the problem and designing a ring guard around the rivet hammer which is actuated by the foot lever, we were able to increase the output 10% above the amount that was produced without any guard, plus the fact that we have reduced the fatigue on the operator.

Union Cooperation

We get very fine cooperation from the union. If we have a machine accident, the machine is tagged by the foreman and no one is allowed to touch the machine until the Safety Director and an officer of the union investigate the accident. In this way we can determine if there was a guard or machine failure or whether the operator was not using the guard provided.

Should an employee be caught not using a guard or changing a guard so that it does not operate properly, he is discharged. When he goes to the union and tells them why he was fired, the union tells him that they would rather see him fired with all his fingers than to plead his case and thereby encourage the disregard of safety rules and regulations and the eventual loss of fingers.

As stated earlier we had an average of 45 amputations of fingers a year prior to installing new guards on our machines and enforcing safety rules and regulations. In the past 10 years since then we have had only 5 amputations involving 7 fingers. None of these accidents were due to guard failure.

Viewed realistically, safety is precarious, in fact absolute safety is unattainable. Even a modest degree of success is purchased with great effort. But the safety director or safety engineer cannot afford to wait for a serious occurrence to prove that a situation or condition should receive attention. Here are a few tips on how those responsible for accident prevention can follow through on safety before the accidents occur.

First of all, spending time in the plant is invaluable to a safety director. You can't run a safety program from your desk and have it effective. Just your presence in the plant accomplishes more than you think.

Foremen and die setters can do much for you. For example, in our own plant we have many pull-out guards in operation. Our experience with these guards has been excellent but only because we have been able to delegate real and definite responsibility to one or two men who see to it that this equipment is always in good shape. They are continually checking to see that it is kept that way; and the die setters and foremen follow through to see that proper cable lengths are always maintained. Nothing is more deceitful than having confidence that a guard will do a job if you fail, only to find that it is not so. The result is an amputation. It is all-around teamwork of these two groups that give you a real record.

Essential Requirements

Finally, there are four essential requirements for a satisfactory safety program:

1. Management, through its safety department, must know what parts of the machinery produce accidents.

2. Know how best to safeguard those parts.

3. Make sure that all persons employed are educated and trained in safe practices.

4. Revise continually the standards of guarding in conformity with the latest practice.

From an address presented at the 27th Annual Greater New York Safety Convention. Pictures by courtesy of The Lionel Corp.

Moving Men Learn Safety ABC's

Part of Mayflower Moving School training takes the student on the road alongside a veteran driver. He is taken through crowded city streets as a part of his training, later accompanies experienced van operator on actual long distance move. Driver-training program success is reflected in sharp accident drop.

There are few areas of business in which a vigilant program of safety is of greater importance than in the household moving industry.

Moving companies, entrusted as they are regularly with household shipments valued in the thousands of dollars (family heirlooms, priceless antiques, precious china pieces, etc.) cannot fail to overlook the fact that the success or failure of their business is directly related to their ability to provide maximum safeguards for the goods they transport.

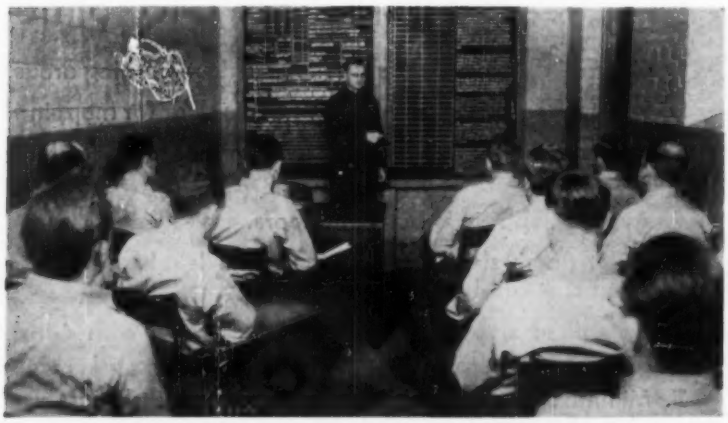
At Aero Mayflower Transit Company, Inc., one of the nation's leading long-distance moving organizations, this business of safety is taken with great seriousness. To the extent, in fact, that it is taught in a company school.

It was back in 1934, seven years after its founding, that the company established in Indianapolis, Ind., an actual school for movers, the first of its kind anywhere and still the foremost in the industry. And through the years, the major course in the school's curriculum has been that of safety—safety in packing household goods, safety in loading and unloading, and safety behind the wheel.

Through this unique Moving School have passed all of the company's movers during the past quarter of a century. According to John Sloan Smith, Mayflower president, the extensive training they received represents the major reason for a steady decline both in the number of damage claims filed against the company as well as the number of accidents involving company drivers.

"Moving household goods has been reduced to a science," said Smith. "People in this country have learned to expect expert handling of their valuable belongings. That's what we have to give them. We

(Continued on page 56)



Classroom session for movers is here concerned with detailed instruction in handling the numerous forms involved in the business of inter-state moving.

Newest advance in packing fragile glassware is a portable dispenser. Table is piled with packing material supplies for each job. Inset shows way of wrapping packet of dishes.

how to select cleaning equipment

Part I of this article, published in the November issue, showed how to determine cleaning costs and proper work loads.

Today, many owners and operators of modern, beautiful buildings are suffering from unnecessarily high building-operating costs simply because they failed to give sufficient thought and study to future maintenance problems when their buildings were still in the design stage. Only through adequate planning and the adoption of the latest equipment and techniques can a building be run most efficiently at the lowest possible cost. It is false economy to cut corners in building construction that will later result in higher annual operating costs, continuing for years and years to come.

Things to Watch

Table 1 gives a few examples of things to watch for if you're soon to be erecting a new building. Many of them can also be adapted to the renovation of older buildings.

Employees who have established a work-pattern and a routine present a real problem when necessary changes are in order. Everyone resists change. The time to establish cleaning and maintenance schedules for a new building or addition is before it is occupied. Employees can be trained in the proper methods, with the correct equipment, right from the start. As soon as the floor plan is established, measured work controls can be determined.

How to Select Proper Equipment

The selection of proper equipment is vitally important to the success of any operation that is to be run with the utmost efficiency. The right equipment must be available to the workers when they need it—where they need it. It is as much false economy to try to operate a cleaning crew without adequate equipment as it is to try to run an efficient office with only one typewriter when three or more are actually needed.

Remember that TIME is the most costly ingredient in any cleaning program. The cost of supplies and equipment becomes almost insignificant when compared with the labor costs involved.

A machine costing $300, for example, that will save several manhours per week over a competitive model selling for $200, is the machine to buy. The labor saved will more than make up for the extra cost in a short period of time. The "price-buyer" will buy the lowest cost machine and, during the months and years of operation ahead, will lose many times what he initially saved.

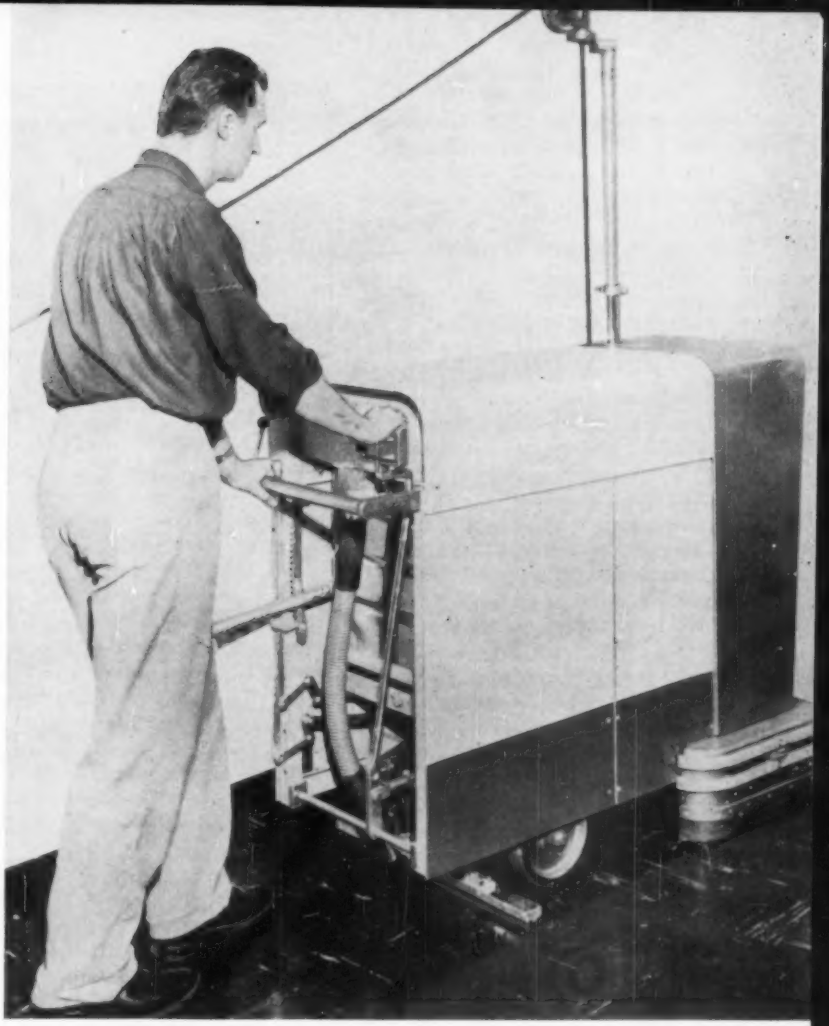
Quality supplies and equipment not only increase a janitor's capacity, they also have an important effect upon his "work attitude." Janitors using the very best materials and modern, efficient equipment tend to take a greater pride in their jobs.

It is obvious that even the finest, most modern equipment and supplies cannot attain their maximum productivity unless they are readily available. Hundreds of costly manhours can be wasted by a cleaning crew just in getting supplies and equipment at the start of the day's work, looking for them during working hours, and returning them at the end of the day. A janitor who must travel to the basement, or

TABLE 1.—How to Simplify

1. **Use slab doors throughout to reduce dust-catching areas.**
2. **Toilets should be wall-hung so floor is clear for mopping.**
3. **All trim should be recessed to eliminate dust-catching edges.**
4. **Avoid steep ramps between floors.**
5. **Toilet floors should be on the same level as halls so cleaning cart can be taken into room.**
6. **Instead of slop-sinks, provide floor drains with 4-inch curbs.**
7. **Minimize ornamental decorations which catch dust and are difficult to clean.**

FLOOR MAINTENANCE SERIES
other articles Nov. & Dec.



some other remote storage area for his tools and supplies, can lose at least a half hour of working time every day and in many cases more.

The best answer to this problem is the small, on-job supply room strategically located on each floor or within each area. This storage room should contain all the tools and supplies necessary to service the immediate area. It should contain the non-expendable tools—buckets, wringers, floor machine, vacuum, mops, etc.—plus the expendable supplies—waxes, detergents, paper products, soaps, etc.—necessary to service the area for a period of at least one week.

Floor Machines

Floor machines are now available that will perform a wide variety of maintenance functions including scrubbing, polishing, scarifying, sanding, light grinding, and rug shampooing. There are even single machines that, equipped with the necessary attachments, can perform any or all of these operations.

Floor maintenance, with the modern machines that are now available, is three times faster than laboring with old-fashioned cleaning tools and methods. This equipment can cut labor costs by as much as 66%—can provide a far better job—and will quickly pay for itself in the time it saves.

When selecting a floor machine, careful consideration should be given to its size. Only the right size floor machine can provide maximum benefit. For example, an area than can be buffed in 60 minutes with a 12-inch machine, can be done in . . .
44 minutes with a 14-inch machine
34 minutes with a 16-inch machine
24 minutes with a 19-inch machine
15 minutes with a 24-inch machine.

Be certain that the floor machines you select are large enough to take

Floor Maintenance

8. Provide a floor-loading incinerator if paper is to be burned.

9. Provide adequate cleaning material and equipment storage areas to reduce travel time for the service force.

10. Install air-conditioning. This will greatly reduce dust problems.

11. Install floors that can be machine-maintained throughout.

12. Use translucent glass partitioning instead of transparent glass wherever possible.

13. Install sufficient wall plugs for maintenance equipment.

advantage of the savings in time that are possible. It is false economy to buy a smaller machine than you should actually have because of slightly lower cost. The added speed that the larger machines make possible will quickly offset their additional cost. Shown in Table 2 are recommended floor machine sizes for various areas.

Table 2: Recommended Sizes of Floor Machines

Brush Size	Floor Area
12"	Less than 1,000 square feet
14"	1,000 — 2,000 square feet
16"	2,000 — 4,000 square feet
19"	4,000 — 10,000 square feet
24"	Over 10,000 square feet

For most cleaning operations in industrial plants, hospitals, schools, offices, etc., the heavy-duty wet-dry pick-up vacuum cleaner is most suitable because it is constructed to take the necessary hours of daily use without undue wear. These machines are available with pick-up capacities of from two to 55 gallons. Attachments are available for many specialized operations, including wet or dry pick-up on floors and rugs, wall and fixture dusting, and cleaning upholstery, furnaces, blinds, machinery and furniture, to name a few.

Four things should be carefully considered when selecting vacuums:

1. Size
2. Ease of Operation
3. Performance
4. Durability.

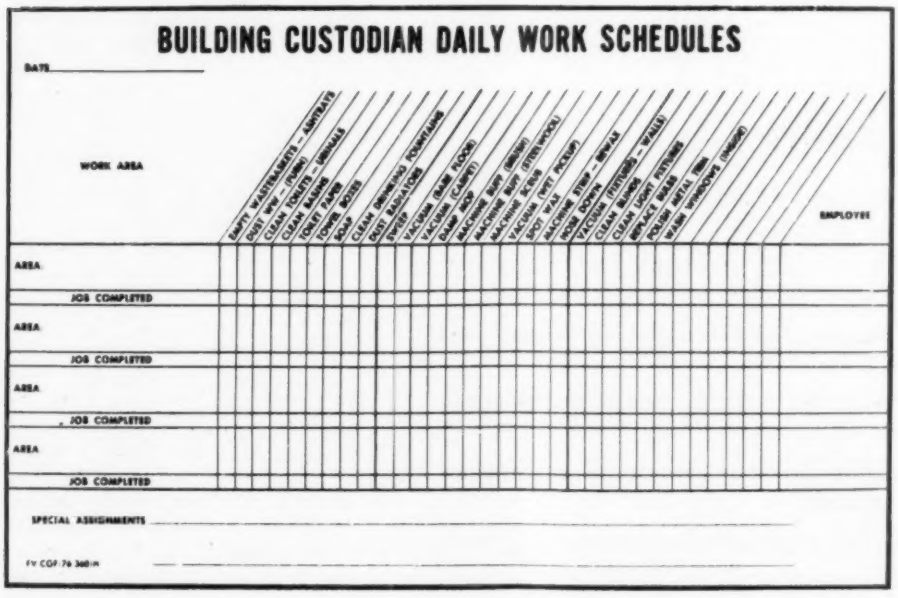
If a vacuum is to serve a limited area, or if it is to be frequently moved from one area to another, the smaller machines should be used. In most of these cases, a five or eight gallon machine will be best because of its extreme portability. However, if a larger recoverable capacity is desirable and portability also remains an important factor, then consideration should be given to the larger 12 or 16 gallon machines equipped with large rear wheels and transport handles.

If a vacuum is to pick up a very large volume of material, whether it be water, wood or metal chips, shavings, or some other bulky material, the power head that converts a standard 55-gallon drum to a wet-dry vacuum should be used. Industrial plants will find this machine most applicable in many cases for cleaning of their production areas.

There is a good deal of difference in the various makes of industrial vacuums available today. Watch for features that will make for easier operation, that is, speed the operator's work. For example, attachments that can be set in place quickly and easily; lightweight hoses and wands to reduce operator fatigue; ease of emptying, such as dump valves on the bottoms of tanks where floor drains are available; by-pass motors for vacuums to be used a great deal for wet pick-up to reduce machine maintenance time and costs. By comparison of various makes and models, you can properly choose the vacuum that will best fit your needs.

Miscellaneous Equipment for General Cleaning

Each area should be equipped with a hand truck that carries all necessary supplies for the normal daily cleaning operations. This will greatly reduce the time spent returning to the supply room for tools and supplies. The truck should be equipped with a large canvas bag for waste paper pick-up, dust pan, counter brush, wiping cloths, sponge, bucket, hand soaps, paper products, cleansers, putty knife, whisk broom, and any other tools or supplies that the janitor will


BUILDING CUSTODIAN DAILY WORK SCHEDULES

DATE_____

WORK AREA

EMPLOYEE

EMPTY WASTEBASKETS — ASHTRAYS
DUST MOP — DAMP
CLEAN TOILETS — URINALS
CLEAN BASINS
DUST PANS
DUST BOXES
CLEAN DRINKING FOUNTAINS
DUST RADIATORS
VACUUM RUGS (FLOOR)
DAMP MOP
VACUUM (CARPET)
MACHINE BUFF (WAXED)
MACHINE BUFF (STEEL WOOL)
VACUUM SCRUB
SPOT WAX
VACUUM (WET) PICK-UP
MACHINE STRIP — RINSE
SCRUB DOWN
VACUUM (STRIPPED) — RINSE
CLEAN FIXTURES — WALLS
CLEAN BLINDS
CLEAN LIGHT FIXTURES
POLISH BRASS
POLISH METAL TRIM
WASH WINDOWS (INSIDE)

AREA
JOB COMPLETED
AREA
JOB COMPLETED
AREA
JOB COMPLETED
AREA
JOB COMPLETED

SPECIAL ASSIGNMENTS _____

FV COF 76 3681M

FIGURE 1: Sample of schedule for daily work by building cleaning crews.

need to complete his normal daily cleaning of the area. Equipment and supplies necessary for the less frequently performed jobs need not be carried on the truck.

Analyze your cleaning operations for the possible use of scaffolds to replace or supplement the ladders now in use. A man can work more safely on a scaffold than on a ladder because of the reduced danger of slipping. In addition, a scaffold will speed up many jobs such as cleaning of ceilings, fixtures, walls, etc.

One of the most important requirements of any efficient cleaning program is that a pre-determined daily work schedule be followed closely. This schedule should outline the daily duties of each worker. An example of a Daily Work Schedule is shown in Figure 1. These sheets should provide:

1. **Designation of work area,**
2. **Individual job assignments,**
3. **Employees to whom jobs are assigned,**
4. **Additional or special assignments not listed on the form,**
5. **Checking column for jobs completed.**

In the sample schedule shown, the column at the top of the sheet lists most of the jobs to be done daily or at frequent intervals. Your check mark in a column under one of the jobs indicates the job that is to be done that day. Special jobs can be written in the blank columns or in the space provided at the bottom of the page. The work area columns indicate a certain group of departments, rooms, offices, sections of a floor, or complete floors, etc., that you have assigned to each employee. Each work area is written in and the jobs to be done in that area are checked off in the job assignments column.

The Daily Work Schedule should be hung on the wall at some convenient location where your maintenance employees can see it each day before they begin work. The work sheet, properly filled out, will tell them at a glance what they should do that day. At the close of the day, your employees should check off the jobs completed in the space provided for that purpose.

The material for this article was prepared by Alden Elstrom Associates for Advance Floor Machine Co. Picture and work schedule form by courtesy of Advance Floor Machine Co.

Another Accident Checked
SAVED THE ONE AND ONLY

One eyed Spencer Bellinger is a thankful man. While operating a turret lathe at the Benton Harbor, Michigan, plant of the Ross Carrier Division of Clark Equipment Company, Bellinger's tap broke and smacked the safety lens of his good right eye. The sight of his left eye had been lost in an earlier work accident. In his latest brush with blindness, Bellinger received no injury. The hardened safety lens of his safety glasses took a beating but he can still see.

Picture by courtesy of "Wise Owl News."

Custodial Training Course

Cleaning executives have a dire need for better trained cleaning personnel, according to a recent National Sanitary Supply Association survey. The survey was conducted by a leading New York firm on a nation-wide basis. Depth interviews were conducted with hospital housekeepers, plant superintendents, building managers and school officials.

It was found that less than 15% of cleaning personnel had formal training in cleaning methods. The survey indicated that inefficiency due to lack of modern cleaning methodology is drastically hampering management efforts to maintain the health, safety and appearance of their establishments.

The National Sanitary Supply Association's Board of Directors studied the survey results. They directed that the Association staff immediately undertake a program to answer the need for custodial training. A wealth of material previously prepared for member manufacturers and distributors of the Association was simplified, and condensed into a home study course.

The course, called "Modern Cleaning Methods," consists of 13 lessons that cover everything from bacteriology to efficient washing of windows, walls and ceilings. Each course is written expressly for the custodian, providing him easily understood instruction in fast and efficient cleaning methods. At the end of each lesson is a simple test.

The student completes this test and mails it to the National Sanitary Supply Association. They correct it, and mail it back to the custodian with the next lesson. A certificate is awarded upon completion of the course.

Each lesson is printed in a separate, illustrated two color booklet. The custodian keeps these booklets for handy reference on cleaning problems. Sets of these booklets are also available, at cost, to cleaning management for use in setting up internal training programs.

Mr. Harold Pond, President of the Association, expressed confidence that the home study course will help train and motivate the average cleaning worker. He added that "As manufacturers and distributors of cleaning equipment and supplies, we are intimately acquainted with the problems housekeeping executives and administrators must face. We share with housekeeping management an awareness of the grave implication of poor housekeeping. It creates safety hazards, causes accidents, and, in some cases, costs lives. It wastes millions of dollars per year, and inflicts unpleasant environments upon employees, customers, patients and students."

Executives responsible for cleaning maintenance may enroll their cleaning personnel through their local NSSA member supplier, or by contacting the National Sanitary Supply Association, 159 N. Dearborn St., Chicago 1, Ill.

SM goes to

the 46th National Safety Congress

Convention Quotes

For all safety people, Chicago was the center of attraction during the week of October 20th. The Midwestern metropolis was again the scene of the National Safety Congress and Exposition, meeting in its 46th annual session.

Delegates from this country and abroad, representing industry, insurance, agriculture, education, government and the armed forces, listened to safety, fire and hygiene experts discuss the newest methods of accident prevention at work, on the highways and at home. With its extensive and varied program, group meetings were held in the Conrad Hilton, Sheraton-Blackstone, Pick-Congress, Hamilton, La Salle, and Morrison Hotels.

Of special interest to most of the delegates was the Exposition of safety products held concurrently with the convention. Manufacturers of devices and equipment to prevent accidents displayed the latest achievements of their research and development laboratories, including new styles of safety shoes, goggles and face shields, gloves and protective clothing, hard hats, respirators, belts, boots, and bosn's swings; new types of guards for power presses, woodworking machines and other mechanical equipment; the most recent kinds of fire extinguishers, alarms, and safety cans; new work-saving floor machines and non-slip maintenance products; newly developed first aid supplies and equipment, hearing-protective and noise-controlling products; new designs in ladders, scaffolds, and above-ground safety devices; new materials for warning and training employees in safety.

At the annual meeting of the National Safety Council, Ned Dearborn, who has served that organization so well and faithfully for the past 16 years, presented his farewell address as president of the Council.

"The Council," said Dearborn, "has been my life for the last 16 years."

Dearborn stressed six points, which, he said, are "so co-related that the omission or failure of one weakens the effectiveness of the others."

"They amount to a review and a 25-year look ahead in the all-important field of safety," he declared. The points he cited:

1. The safety movement needs an intensive and extensive program of basic research. "We know where and how often accidents occur, but we know far too little of the basic reasons why they occur.

"Why do motorists so often exceed speed regulations? Without knowing the basic causes of accidents, the best we can do is give birth occasionally to some ingenious 'gimmick' which may be of some value, but which falls far short of fundamental changes."

2. The safety movement needs

fundamental additions to its education program. "The right attitudes toward safety should be a target in all our schools and colleges for all ages—from the nursery school to graduate study.

"Safety starts with good attitudes, followed by good habits, and complemented by a reduction of accident hazards. All this is the responsibility and the opportunity of education in its broadest sense."

3. The safety movement needs a complete program of public relations to supplement "the truly remarkable publicity program" it now has. "Financial support for safety by the public is practically nonexistent. If a cake of soap merits depth studies, so does safety."

4. The Council needs to review its relations with local, regional or state safety organizations.

5. The safety movement needs to rededicate itself to the ideal of cooperation.

6. There is a need to preach and practice the doctrine of moral responsibility—"our most effective instrument in the prevention of accidents."

Following are quotations from some of the other speakers at the various meetings of the 46th National Safety Congress.

General George C. Stewart, executive vice president of the National Safety Council: "If the accident problem is to be solved, 170 million people have to be educated —have to be informed, persuaded, convinced. This is something we're working at every day, in a hundred different ways."

During the last year, he told delegates, the Council has:

1. Studied old and new accident problems.

2. Put out safety information to the public. "We have not forgotten that information locked up in a vault is no good."

3. Made a good start in mobilizing the moral forces of the country for safety. "We recognized that safety is not only good economics, but good morals."

4. Done more than ever before to give guidance and impetus to local safety programs.

5. Helped other organizations carry on safety programs.

Safety Devices

George W. Laub, vice president, Security Controls: An invisible, ever-present "sensing field"—one of the latest developments in safety—is helping prevent accidents. The

"If you don't mind, I'd like to show the Safety Committee what their chairman has done."

sensing field—a radio-like field surrounding a hazard—"takes safety out of the operator's hands."

"His safety," Laub explained, "depends not on his quick thinking or correct actions, but on the automatic, ever-present sensing field that instantly recognizes when he is in a danger area."

Douglas B. Chant, Secretary-engineer, Ontario Pulp & Paper Makers' Safety Association: What's so new about safety shoes or safety goggles? Why do workers reject these "new-fangled" ideas?

"Is there something novel about people using gadgets to avoid getting hurt? What were the shields of the Assyrians in Biblical times, the breast-plate worn by Goliath when little David conked him with a pebble?

"Would any of your men catch a game of baseball without a mask, protector, shin-guards and knee pads? So what is so different about those devices and the protective equipment worn in industry today, and why do we have to worry about getting our men to use them?"

Dr. E. J. Schowalter, medical director, Western Electric Co.: Vanity plays a big role in selling factory workers on wearing prescription safety goggles. And unless a factory worker is sold on safety goggles, they're useless.

"An employee could be provided with the best possible goggle from the standpoint of prescription and safety and it would be useless unless he wore it at all times when exposed to eye hazards.

"In my experience, the more acceptable goggles are cosmetically, the greater the acceptance."

L. E. Soderquist, vice president, McNeil Machine & Engineering Co.: Tire curing is inherently dangerous—but it's getting safer! A new press makes things safer. Development of the press reduced the chance of workers suffering muscular strain and back or other physical injuries, and eliminated the chance of employees being burned when disconnecting steam or hot water connections.

A. S. MacLeod, engineering department, U. S. Rubber Co.: A rubber company took steps to prevent accidents involving a mixer of rubber compounds. "Our objective is to prevent recurrence of conditions that could result in an accident like that which occurred at Los Angeles Jan. 21, 1955."

Six men were burned in an accident involving a Banbury mixer. Four of them died.

After studying the accident, U. S. Rubber ordered installation of batch temperature monitoring devices for the over-temperature protection of all production-size Banbury mixers.

"We consider it of prime importance that at least once every six weeks the plant safety supervisor witness a Banbury shutdown by running a test batch up to the preset maximum safe temperature."

R. S. James, U. S. Bureau of Mines: Wanted by the coal mining industry: An automatic detector system that will protect miners

(Continued on page 22)

IMMEDIATE DELIVERY...

The Only Work

ON—THE—SPOT EXPERT ANSWERS

to problems like these:

- What is the right eye protective device for each hazard . . . when should it be worn . . . how can you select for best results and greater economy? (Did you know there are more than 45 different types of goggles, each one designed for a different hazard and use?)
- What are the safety and maintenance factors of specific paints . . . the importance of the Color Code and where to use red, green, white, orange and even purple . . . who specializes in such paints?
- What are the most economical types of materials handling equipment for you?
- What is the importance of a uniform code for safety signs and signals . . . where can you find materials which will fit a planned program?
- What are the essentials for hand soaps and cleansers to protect the skin . . . the types of protective creams to prevent skin rash?
- What are the various types of electrical equipment approved by the Underwriters' Laboratories for specific conditions of hazardous gases, vapors and dusts . . . who makes them?
- What are the vapor hazards of flammable liquids . . . what fire prevention containers and equipment will do exactly the right job?
- What is the range of protective clothing, such as 70 different types of protective gloves . . . the specific merits and uses of each one—which is the very best for you?
- What can you save in time, money and production by selecting the right ladder for an operation?
- When will awards and placques speed up production?

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- **WHEN to use it**
- **HOW to use it**
- **WHERE to get it**

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Convention Quotes

(from page 19)

against dangerous concentrations of methane. The U. S. Bureau of Mines is helping the industry get such a detector. It has appealed to representatives of electronics firms and the United Mine Workers of America, and to coal operators, for help in preventing coal mine explosions.

Result? "New methods of detecting methane will be forthcoming. We're convinced the problem can be solved."

Robert C. Necker, Budd Co.: "A safe design is not an accident. It is the result of serious planning and thought."

Safety in die design is aimed at protecting everyone from the production worker—the person who uses the tool—to the press equipment on which the tool is to be run.

"To constantly alert our men to safety we print on the first sheet of every die drawing a safety emblem. Before a design is issued to the shops for construction, the foreman responsible for the men working on the design signs his name and the date inside the safety symbol. This notifies everyone that he personally has reviewed the die for safety features."

George E. Wind, staff engineer, Clearing Machine Corp.: Manufacturers of power presses keep their eyes open. "They're always on the lookout for new ideas and products to make press operation safe."

"Since the guarding of moving parts is, for the most part, dictated by strict safety regulations in most states, most press manufacturers arrange their design standards to encompass the most stringent features of all the states."

Leslie D. Price, National Electrical Manufacturers Assn.: Your new electric appliances probably have some hidden safety features.

"It is essential that these products, their installation and their use assure reasonable safety to the public." Consequently, a lot of thought is being given to safety in electric appliances.

Take electric irons, for example. Twenty-five years ago, they caused about 13 percent of all electric fires. Now they're almost completely safe, thanks to automatic thermostatic controls installed by manufacturers.

E. A. Hatfield, safety director, Coca Cola Bottling Co.: Most hand injuries "occur to men working without gloves." So, naturally, from a safety standpoint it is desirable for workers to protect their hands with gloves. But, employees who work for awhile without wearing gloves resist later attempts to make them wear gloves.

"They get the impression gloves are cumbersome and a great nuisance. Conversely, men who work with gloves on from the start soon acquire work habits that enable them to work efficiently, and they find gloves no hindrance."

E. D. Cory, chief electrical engineer, Cleveland-Cliffs Iron Co.: More than 80 years of safe operation! That's the enviable record of the Koepe hoist, a European device recently introduced to the U. S. mining industry, utilizing a counterweight principle similar to the familiar passenger elevator.

"The Koepe hoist will undoubtedly provide hoist operation that is as safe or safer than that of a drum hoist."

Marshall E. Kulberg, safety engineer, Sylvania Electric Products: From railroad yards to rocket-testing areas—that's the scope of closed-circuit TV.

"Closed-circuit TV systems permit the observation of processes that are in unsafe locations without exposing the observer to the hazard.

"This is just one of the devices that, although designed for another purpose, help promote the well-being of the user."

J. A. Cowan, Pennsylvania Sling Co.: "Chain slings in the foundry are a valuable tool. In fact, it is difficult to do without them. However, they can be a dangerous tool —not from their nature, necessarily, but from lack of knowledge about them, the attitude that they are expendable and the lack of respect which is given them."

Safety Responsibility

Joseph A. Menendez, safety director, Falstaff Brewing Corp.: How can you sell top management on safety?

"Show them that accidents are inefficiencies, that an effective safety program is an efficiency measure."

Menendez also gave this advice for selling management on safety:

1. Ghost write for top management letters or memos on safety that you think should be sent key personnel.

2. Don't let top management become a figurehead. Make them participate actively in the safety program.

3. Blow your own horn by publicizing your safety activities.

4. Above all, to sell a safety program to top management, be sincere and enthusiastic.

Robert Beeson, supervisor of safety, Perfect Circle Corp.: "Trying to manage a safety program without safety inspections would be like trying to manage a business without an inspection department. You just can't do it and succeed."

"The No. 1 purpose of a safety inspection is to spot unsafe conditions and practices and have them corrected. But you accomplish other things at the same time. One important by-product is that inspections help sell safety to employees. A carefully planned inspection program will reduce the number of work injuries."

Pierre E. Dery, safety supervisor, Dominion Rubber Co.: Leadership of the "Big Boss" is a requisite of a successful industrial safety program. A safety program is "essential for efficient operation" of a plant.

"The prevention of accidents requires official leadership, since the success or failure of a safety program is dependent, to a great degree, on the attitude of top officials —and on their participation. This must not be a half-way measure. Safety must come first. Management must be in earnest about safety."

Marvin B. Travis, director of safety, Northern Natural Gas Co.: "Safety, like salt, gives our operations more taste and zest. The man best suited to salt our operations with safety is the supervisor."

"Safety is the antiseptic that keeps our operations from becoming rotten. An effective safety program will salt our operations with

safety before they become rotten enough to injure someone."

Frank W. Marcaccio, chief of the division of industrial inspection, Rhode Island Dept. of Labor: Safety men sometimes have it rough. For example, they ask factory management to correct unsafe conditions. Then, after the recommendations are complied with—at company expense, naturally—they find that workers aren't using the new safeguards.

"We should appreciate that management has spent money for our benefit. We certainly should show our appreciation by using the safeguards provided."

Alfred R. Lateiner, safety and training consultant: Industrial safety men should be concerned about all accidents—not just those in which someone is hurt.

"Safety men must be production-minded. Accidents are a production problem. Every accident costs money—in damaged products, damaged equipment, interrupted production, disrupted schedules. And any accident can cost more than your entire safety program expenditure."

E. T. Moore, president, Jersey Central Lines: Safety men were accused of being more concerned over winning popularity contests than in backing their convictions.

"Too many safety men are afraid to upset the applecart. They lack the courage to fight for the things in which they believe. They don't want to put other staff members on the spot by pushing too hard for changes in operating methods or for corrections of physical hazards. They go along, hoping nothing will happen. This may increase the safety director's popularity, but it certainly isn't advancing the cause of safety."

Richard B. Weckel, assistant safety director, Pickands Mather & Co.: There's little difference between river boats and ocean-going vessels, from the standpoint of safety.

"Each of these vessels has decks to slip and fall on. Each has finger-crushing watertight doors. Each has lines, rigging, machinery, ladders and coffee urns which can injure people."

How to eliminate accidents on any kind of ship? "Inspection is one of the paramount keystones in accident prevention. Only with thorough and frequent inspections by experienced personnel can we be sure of the exact condition of our ships."

Henry B. Duffus, administrator of accident prevention, Westinghouse Electric Corp.: How important is the safety engineer in industry today? He's invaluable.

"The safety engineer cannot be supplanted by someone without the proper technical background. Engineering is still the key to industrial accident prevention."

"In industry, where the full effect of safety engineering has been felt, the frequency and severity rates of accidents have been cut in half during the last 15 years."

John B. Creeden, safety engineer, Liberty Mutual Insurance Co.: Safety men, claims adjusters for in-

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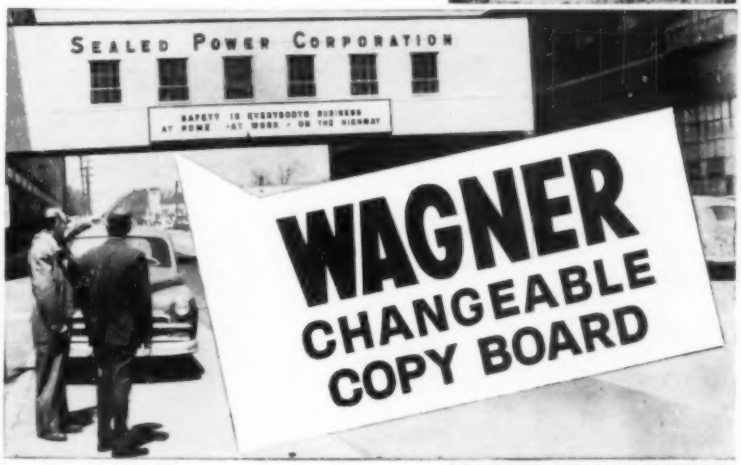

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surance companies and policemen all investigate accidents differently. Claims adjusters want to find out who is legally responsible for an accident. Policemen are most concerned over a law violation.

"Safety men, on the other hand, are interested primarily in why the accident happened, not so much in who was responsible. We study the accident to find out why it happened in order that we can search for a way to prevent a recurrence."

Fire Protection

James R. Moher, deputy fire chief, Milwaukee Fire Dept.: Firemen should immediately don respiratory protective equipment when faced with internal fire-fighting situations.

"Even in a residence there may be a concentration of toxic gases from one or more plastic products."

"Firefighters should increase their use of self-contained breathing apparatus to protect their health against the toxic fumes of burning synthetic materials."

A. C. Lordi, mining industry engineer, Westinghouse Electric Corp.: Direct-current power first was used in underground mines because it best served the traction needs of electrically powered mine locomotives.

With mechanization, d.c. systems were expanded. As a result, copper costs, power losses and available fault currents increased. Many mine operators looked to the use of alternating-current (a.c.) power to minimize the undesirable increases.

"The recent trend toward use of three-phase a.c. power underground attests to the advantages offered by a.c. power. While the hazards of shock and electrically initiated fires and explosions still exist whether the electrical power be d.c. or a.c., the three-phase a.c. system lends itself to better control of these hazards."

Allen L. Cobb, director of fire prevention and safety, Eastman Kodak Co.: Every man a fireman! Such should be the situation in a chemical plant.

"It may be necessary to train all of the operating force of a plant in fire-fighting."

Why? "Because fighting chemical fires is a specialized job that requires specialized training. For this reason, the chemical plant should have its own fire forces."

Holly P. Bradley, safety supervisor, Service Pipe Line Co.: It's unsafe to transport gasoline in the trunk of automobiles in cans with spring-loaded valves. Spring-loaded valves are designed to release the internal pressure in the gas can before structural damage can be done it because of temperature increases. Tests showed that the hazard of releasing flammable vapor inside the luggage compartment is increased proportionately with the increase in electrical accessories on the vehicle. "The electrical devices provide a source of ignition for liberated vapors. Gasoline, and all other flammable liquids, should always be stored and transported in containers strong enough to prevent leakage."

". . . and you'd better keep that tin cup handy. With your goggles so dirty, you must be half-blind most of the time."

W. D. Cook, vice president, Suburban Propane Gas Corp.: Safety standards are what the liquid-petroleum gas industry relies on in trying to market its product safely. The standards include National Fire Protection Assn. pamphlets, Interstate Commerce Commission regulations and American Gas Assn. appliance standards.

Dale K. Auck, director of fire protection division, Federation of Mutual Fire Insurance Companies: What can you do until the fire department arrives? Get busy with a fire extinguisher!

"Don't sell the lowly fire extinguisher short. The fire extinguisher is right down at the grass-roots level of fire protection—right where the fires start."

"So what can you do until the fire department arrives? The answer lies in the old axiom. 'The Lord helps those who help themselves'."

W. R. Gilliland, assistant safety manager, Aluminum Co. of America: "The encyclopedia defines a thermite reaction as 'a chemical reaction between iron oxide and aluminum that produces superheated iron and aluminum oxide slag.' However, reactions of this same type can and do occur between many of the nonferrous metals and oxides, producing explosions. Measures to prevent such explosions are practical and easily performed by operating personnel."

Safety Training

James W. Tysse, manager of safety, Republic Steel Corp.: "Everyone in the plant must be given a sense of participation in the safety program and an awareness of his own personal responsibility in it.

"We at Republic Steel are more than aware of the importance of a sound safety program. But we are also aware of the psychology of safety, the need for awakening in every man a realization that he himself can make an important contribution to his own safety and that of his fellow workers. Safety is an all-hands job."

George A. LaHusen, general safety supervisor, Crown Zellerbach Corp.: Think safety, feel safety, breathe safety. You will if the proper "safety climate" is generated and maintained.

In 1956, J. D. Zellerbach declared that: "Management's responsibility to provide a safe place to work requires far more than the provision of safety guards around machinery, adherence to state and local safety regulations or the establishment of elaborate safety campaigns. It requires the generation and steady maintenance of a safety climate."

Dr. N. Gillmor Long, chief surgeon, Lumbermens Mutual Cas-

ualty Co.: Here are some back-saving tips on how to lift.

1. Size up the load. If it seems more than you can handle easily yourself, get help.
2. Face the load squarely and get a firm footing, feet planted firmly and spread 10–12 inches apart.
3. Bend your knees.
4. Get a good grip on the load.
5. Keep your back straight, and lift by straightening your legs. Lift slowly and evenly.
6. Keep the load close to your body.
7. Don't twist your body. To turn, change your foot position.

D. F. Brady, manager of safety, Maytag Co.: "Thinking safety will result in fewer accidents in our plants, in our homes and, most of all, on our highways. The sooner we get our employees thinking and discussing safety, the sooner we'll eliminate not only industrial accidents, but off-the-job accidents as well."

E. B. Bell, assistant safety director, Ohio Power Co.: What should you do if an electric wire drops from a power pole onto your car—while you're inside it? "The occupants of the car are in no danger of electric shock as long as they stay inside the car."

H. S. Fryberger, safety advisor, B. F. Goodrich Co.: TV quiz shows have competition—from the industrial incentives program! B. F. Goodrich Co. has given away such prizes as: All-expense-paid trips to the Kentucky Derby, the Army-Navy football game and World Series baseball games; electric clocks, fruit juicers, fans and electric irons; savings bonds; candy bars; silver dollars; and packs of chewing gum.

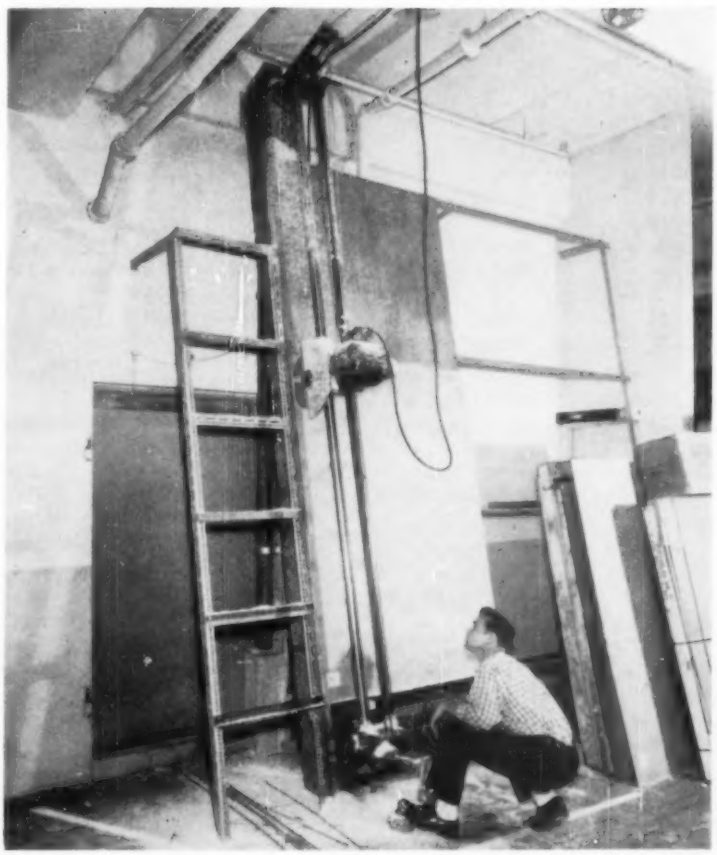
"Do incentives used in accident prevention programs pay off? At the B. F. Goodrich Co., the answer is a very definite—yes!"

Oscar G. Mayer, Jr., president, Oscar Mayer & Co.: A lowly cup of coffee has proved its value as a life-saver. Employees, in competition for a free cup of coffee in the cafeteria for the winning department, cut the number of lost-time accidents from 77 in 1952 to five in 1957.

"Although the prize is small, there has been keen competition for the award."

Joseph A. Fernandez, personnel and safety supervisor, National Gypsum Co.: The "unexplored land in the world of industrial safety" is off-the-job safety. "In so many respects, off-the-job safety has been our blind side—an area perhaps a trifle too far removed from the actual plant situation to explore. I submit that the realm of off-the-job safety is well worthy of thorough

A SAFETY IDEA



Cutting Operation Goes Vertical

A little ingenuity goes a long way at the Pittsburgh warehouse of Commercial Plastics & Supply Co., national distributors of plastic materials. To conserve space, this versatile cutting rack was recently installed for handling plastics in sheet form up to 100 in. by 120 in. Cutting is done on the downward movement of the 1½ hp panel saw, and a 60-lb. counterweight helps control movement. Motor and saw carriage are moved up or down on 2-in. diameter solid steel rails by a hand crank (visible at man's left shin). The table is made of ¾-in. plywood, held in place by a steel framework. It can be adjusted 90 degrees. The entire installation occupies a space of three by 13 feet.

examination. An employee who disregards safety off the job does not by some mystic process evolve into a safe worker when he punches the time clock."

Arthur J. Ziraldo, safety director, Dominion Forge: Combatants in the war on accidents need basic training the same as soldiers. "No soldier goes into battle without basic training. Why should a new employee be expected to work safely on a new job without adequate previous instruction?"

Training a new employee in safety begins the day he is hired. "The employee forms his attitudes toward safety the first day on the job."

S. F. Mack, general superintendent, Northern Wood Preservers: Is it possible to sell an item you once couldn't give away free? Yes. Attempts to get employees to wear hard hats were futile.

"Somewhere along the line, some of us were not very smart." But then we passed out hard hats to top officials of the company, and announced that from now on, hard hats would cost $5 each, instead of being issued free.

"In three or four days, we had run out of hats. Some of the employees who had to wait a few days until our new stock arrived were quite indignant. One or two raised a bit of a raucus. But the results were most gratifying."

W. C. Creel, safety director, North Carolina Dept. of Labor: The supervisor is the key man in an industrial safety program. "Fail to train the supervisor and you set up a bottleneck that will block your safety program. Train the supervisor well, and you will get the full benefits of a safety program in action."

James Westfield, assistant director of health and safety, U. S. Bureau of Mines: People are getting wiser. More and more people realize the "desirability of taking adequate measures to prevent accidents."

"The more the subject of safety is carefully considered and analyzed, the more definitely it is established that safety is advantageous to everyone—employer, employee and the general public . . . not only from an altruistic point of view, but also from the standpoint of dollars and cents."

Herbert A. Wendel, chairman, bureau of safety, Anaconda Co.: Versatile. That's what a new visual aid device is—a type of projector—used to spark talks, meetings and conferences. "Visual aids are invaluable as a means of bringing a message home in a dramatic manner. They're used extensively today to create and stimulate interest in the promotion of safety projects and campaigns."

James S. K. McChesney, mining engineer, Marmoraton Mining Co.: The lessons taught by the little woman needn't be left behind at the front door. Sometimes they'll come in handy on the job. Housekeeping lessons learned at home can be put to good use at work. Some of the safety precautions observed by employees of the mining company include:

1. Areas should be kept clean and maintained in good housekeeping order.

2. Doors and passageways should be kept free of obstructions.

J. T. Dunlop, safety supervisor, Dierks Forests: A forceful selling job and a new company policy helped gain acceptance for hard hats by employees. The "hard sell" came when the firm decided to try to get the hats accepted by its loggers. "At the end of two years, 70 percent of our loggers were wearing them."

All efforts to get hard hats worn by the remaining 30 percent of the workers failed. "They needed protection, too. And they were influencing others not to accept the hats." After an incident in which the hat prevented serious injury to a logger, company policy was set up requiring everyone to wear them. They were accepted by everyone.

Industrial Health

Dr. R. W. I. Urquhart, director of medical services, Hydro-Electric Power Commission of Ontario: Accidents can't be measured in money—not when human lives are involved. "The medical director of a firm knows perhaps better than anyone else the real cost of accidents, and that not all of the cost can be measured in terms of dollars."

He suggested that the industrial medical director "make available to the safety engineer his special knowledge of hazards in order that a safe environment and safe working practices may be developed."

J. E. Laughlin, manager of plant protection, Firestone Tire & Rubber Co.: Business is suffering from a billion-dollar hangover! A recent report by the National Council on Alcoholism shows that:

1. Alcoholism strikes nearly five million Americans.

2. One out of every 13 men 20 years of age or more is an alcoholic.

3. Three out of four alcoholics are 35–55 years of age.

4. Alcoholics lose more than 36 million working days each year. Annual wage loss attributed to excessive drinking: 432 million dollars!

5. At least 1,650,000 problem drinkers are in industry today.

Dr. D. J. Kilian, director of industrial health & medicine, Texas Div., Dow Chemical Co.: Speed doesn't always kill—in fact, sometimes it's beneficial. An example of how fast action is important is the treatment of chemical injuries to the eyes.

"The most important part of the treatment of a chemical burn to the eye is what the victim does in the first few seconds. Allow the material to remain in the eye for even a few seconds too long and some permanent scarring may result. Get to a source of water and wash the eye thoroughly before the chemical has any more chance to do damage," he advised.

Best treatment of all, though? "Wear safety goggles."

Dr. John H. Foulger, director of medical research, E. I. du Pont de Nemours & Co.: The term "accident prone" is being over-used. "It is quite easy to coin a catch phrase to describe a situation. It is more difficult to prevent the phrase from being used too widely. The term accident prone is a good example."

"Physiological conditions" (samples: lack of sleep, annoying situa-

tions, money problems) may make people vulnerable to an accident. "Since such conditions can occur to all of us, it is improper to use such a term as accident proneness."

G. R. Yourt, consultant on industrial hygiene & safety, Rio Tinto Management Services: Know what konimetry is? Or what a konimeter is used for?

It is the science of sampling impurities in the air. The konimeter is an instrument used to measure contaminants. "By means of a pump the konimeter blows air toward a glass slide covered with a thin film of adhesive. Air-borne dust adheres to the adhesive."

The slide then goes through several processes, the dust is magnified many times and then counted through use of a microscope. All this to assure healthful air conditions in mines.

Safety Program

Raymond J. Faust, assistant executive secretary, American Water Works Assn.: What is an industry's No. 1 asset? The people who work for it. "And that asset is very much worth protecting."

"It is customary to buy insurance for buildings and equipment to guard against financial loss. Why isn't it equally important to protect your investment with a strong safety program?"

L. G. Smith, superintendent, electrical distribution department, Baltimore Gas & Electric Co.: Cooperation is the backbone of a successful safety program. "It won't take the worker long to sense if his supervisors are paying only lip service to accident prevention. Unless supervisors **want** their employees not to get hurt—and work to that end—their people will continue to get hurt and be killed."

Raymond C. Ellis, Jr., senior engineer, industrial department, National Safety Council: The small town has it all over the big city—as far as safety goes, at least. "The safety director for a small operation has a definite advantage over the safety man with a multi-plant organization, because the safety message stands a better chance of getting across in a small town.

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"Workers are going to hear us safety men talking when we know each of them by name, when we attend the same church and have kids in the same class in school."

Herbert L. Miller, vice president, Cincinnati Transit Co.: Safety material is like an atom bomb—"it's just a useless mass until it is triggered into action."

"Every single thing we think or write or prescribe for safety requires translating into action to be effective." A knowledge of safety that is properly translated into action will result in an end to many accidents.

Vernon C. Page, chief engineer, Sohio Chemical Co.: What causes accidents? People and the errors they make. In accident reports from plant superintendents in Sohio's general marketing area: "In only three cases was human error not a factor."

Ways to prevent accidents? Follow these rules:

1. Study the job before you start.

2. Recognize the hazards involved.

3. Take action to avoid or overcome them.

R. T. Sullivan, production supervisor, Spanish American Mine, Northspan Uranium Mines: Accidents—every one of them—are unnecessary. "The target of zero accident frequency is real and attainable. Zero frequency is possible in any company's operations, but it necessitates energetic and continuous efforts by everyone on the payroll."

Howard M. Winterson, vice president of industrial relations, Blaw-Knox Co.: A million lives saved! That's what the safety movement can take credit for.

"That's a gratifying part of the safety performance. That vast deed of life-saving was, in part, the deed of all who contributed to, invested in and supported the safety movement. Many people are alive today who would have died were it not for the safety movement."

Thomas H. Rockwell, assistant professor, industrial engineering, Ohio State University: Many of today's engineering graduates are completely blind to safety. "They are deficient in what we might call the 'responsibility for the safeguarding of human life.'"

The lack of safety consciousness is a "blind spot in engineering education." "Fortunately, this blind spot is not a permanent disability of the student." Treatment of the "disability," is "adaptation to sound safety philosophy and the illumination of safety engineering principles."

G. I. Cambre, associate professor, mechanical engineering, Louisiana State University: There is time for instruction in safety. "The purpose of education is to prepare a person for his role of service to society. If, while he is a learner, he is not taught to use his acquired knowledge safely, he may become a casualty himself before he can put his acquired knowledge into practice. Or, he will mis-apply his other knowledge through a lack of knowledge of safety fundamentals."

Thomas E. Seavey, master mechanic, Pontiac Motor Div., General Motors Corp.: Safety has become a major objective of manufacturers. "Safety is no longer a by-product. It is not good business to injure and maim your employees when, through a concerted, conscientious effort, the accidents could be minimized or eliminated."

N. Y. State Conference on Safety & Health

Top-level figures from New York State industry, labor and government, headed by Governor Averell Harriman, were featured speakers at the general sessions of the Governor's Conference on Occupational Health and Safety in Albany, October 7 and 8.

Richard F. Walsh, chairman of the national AFL-CIO Safety Committee; and Norman R. Baker, president, New York State Society of Newspaper Editors; shared speaking honors with the Governor at the special dinner meeting at the Sheraton-Ten Eyck Hotel.

At the opening general session in the morning, Isador Lubin, State Industrial Commissioner topped a program which included Harold C. Hanover, president, New York State Federation of Labor; Louis Hollander, president, New York State CIO Council; and Joseph R. Shaw, president, Associated Industries of New York State, Inc.

At the closing luncheon session on the second day, the speakers included Edward T. Dickinson, State Commissioner of Commerce, Angela R. Parisi, Chairman, Workmen's Compensation Board; and Charles W. Halloran, First Deputy Industrial Commissioner of the State Labor Department who summarized the findings of the two-day panel discussions in a report to the Governor.

Creation of a special review board to study and propose needed changes in industrial safety laws and standards as a means of cutting financial and human losses in this area was proposed by Louis Hollander, president of the New York State CIO Council.

Governor Averell Harriman, in his address stated that in the last four years, substantial progress has been made in reducing on-the-job accidents among employees of New York State.

"Happily, we are making progress. In each of the last four years, there has been a reduction in the number of accidents reported to the New York State Workmen's Compensation Board. Last year, the accident frequency rate for all factories in the state was 12.7 per million man-hours worked. Four years before it was 14.7 injuries per million man-hours. This is a drop of 14 percent."

Governor Harriman continued:

"Industrial safety covers a far broader area than the malfunctioning of a man or a machine. The control of environmental factors is important. And the psychological factors that lead to man-caused accidents and disease loom large. The Department of Labor's Division of Industrial Hygiene has moved into these areas. Its pioneering efforts have already paid off in our decreased frequency rates.

"We have pretty much overcome the industrial diseases that killed and disabled an earlier generation of workers. Anthrax is almost gone; lead poisoning is increasingly rare; silicosis is under control; industrial skin diseases are now understood. And strict enforcement of industrial housekeeping codes has eliminated factories as breeding areas for tuberculosis and other respiratory diseases.

"But each new advance in technology brings with it new dangers to the lives and health of workers. Our newest technology, and the one offering greatest promise to man, atomic energy, also threatens its workers with a totally new complex of dangers to health. But we have already moved to meet the threat from ionizing radiation—without interfering with the normal development of the nucleonics industry and the use of its products. Today more than 400 plants in New York State use apparatus producing ionizing radiation. Their safety record is as good as any in the State. The reason lies in our radiation code, which set a a pattern for the nation, and in the radiological unit of the Division of Industrial Hygiene, set up to control the hazards in our newest industry."

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MEMBER . . . . . .
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American Bar Ass'n, New Jersey Bar Ass'n,
Chairman, Committee on Workmen's
Compensation, New Jersey Bar Ass'n
National Federation Insurance Counsel
Past Commander, American Legion, Post 10,
. . . . . Newark, N. J.

"HAZARDOUS" EMPLOYMENT—Injury Doing Work Not Inherently Dangerous

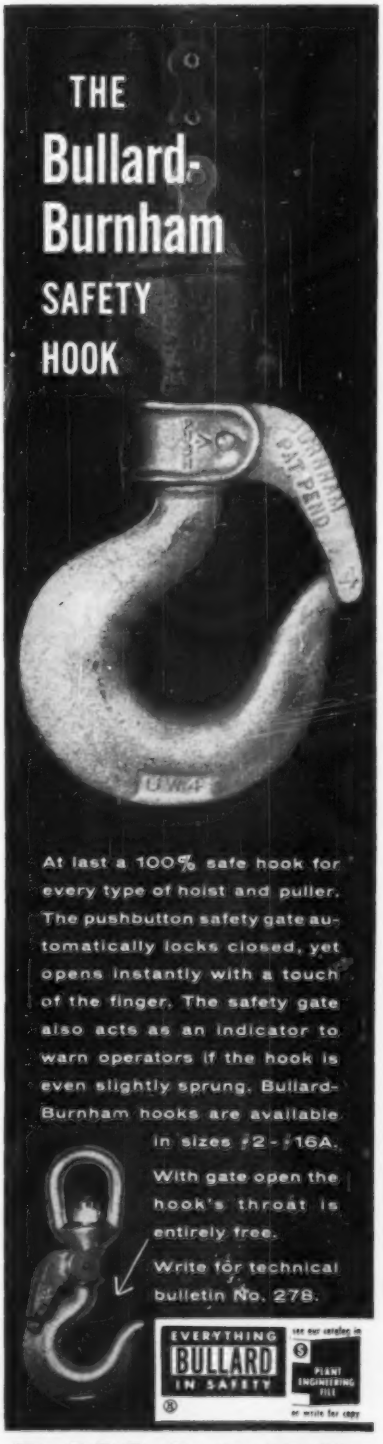
A janitress was properly awarded compensation for injuries sustained while operating a floor waxing machine where it was shown that part of her duties was cleaning up around electrically powered machinery. The employer contended that the work of the claimant was not one of those listed as "hazardous" under the compensation law. The court ruled that when the work of an employee is manual or mechanical and is connected with, incident to, and an integral part of the business or industry enumerated in and defined as "hazardous" by the compensation law, such employee is both protected and bound by the provisions of said act. This applies even when such work may be performed in a room or place or under conditions not inherently dangerous. Award sustained.

Halliburton Oil Well Cementing Co. v. State Industrial Commission; Oklahoma Supreme Court. No. 37, 574, Sept. 16, 1958.

THIRD-PARTY ACTION—Electric Shock —Patent Danger

An employee of an independent contractor was injured when he accidentally came in contact with an electric wire. He was not entitled to recover against the owner of the premises on which he was working at the time of the accident since the owner had exercised reasonable care to promote the employee's safety. The employee had been engaged in installing a water main on the owner's premises. At the time of the accident the employee was working in an enclosed area in which was located a huge transformer. The work area was fenced in and signs were placed all around warning of the danger of the transformer and the wires leading therefrom. The wire, although in plain view, was insulated for purposes other than to protect persons coming in contact with it. The employee contended that since the wire was insulated, the danger was hidden. The court ruled that the wire was not hidden since the area had been closed off and warnings posted. The court further ruled that it was not the owner's duty to warn the contractor or the employee since the danger was apparent and known to them. Reversed.

Clinton Foods, Inc. v. Youngs; United States Court of Appeals for the Eight Circuit. No. 15, 887. July 15, 1958. Appeal from the United States District Court for the Southern District of Iowa.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COMMON-LAW ACTION — Longshoreman—Safe Place To Work

A longshoreman was properly denied recovery in a common-law action against a shipowner where he was unable to prove that the shipowner failed to provide him with a safe place to work. The injured workman was working down in a hold of the ship and some lumber which was being loaded into the hold slipped and crushed his foot. The employee argued that the shipowner created an unsafe place to work when he directed and permitted a cargo of lumber to be lowered into a hold of the size of that used. In that respect the uncontradicted evidence was that it was a usual operation done in the usual manner—that loads too long to be lowered into a hold on the horizontal are as a matter of practice and necessity lowered by tipping so that they will fit through the hatch, and that it was frequent and customary to lower loads through hatch openings too short for horizontal clearance. Unseaworthiness cannot be extended to the point of holding the shipowner liable in a case where he contracted for the loading of a customary cargo in a customary way, no failure of ship's gear being shown and no showing that what was customary was not reasonable, but simply and solely on the basis that an accident occurred. Affirmed.

Phipps v. Holland America Line; United States Court of Appeals, Ninth Circuit. No. 15, 857. August 21, 1958. Appeal from the United States District Court, District of Oregon.

ACTION AGAINST UNINSURED EMPLOYER—New Trial—Fall from Ladder

In an action against an uninsured employer by a gardener who was injured when he fell from a ladder while trimming a tree, the trial court did not err in ordering a new trial since there was substantial proof contrary to the verdict reached by a jury. The record showed that the ladder used by the gardener was in good condition. He had used it many times prior to the accident without any difficulty. The employee admitted to the employer that the ladder was safe and that he fell because a car passed too close to the curb where he had placed the ladder. Under the Labor Code, there is a presumption of negligence placed upon an uninsured employer. Also the latter may not avail himself of the defenses of contributory negligence or assumption of risk. The court ruled that the trial court did not abuse its discretion in granting the employer's motion for a new trial after a verdict for the employee was rendered since there was no substantial evidence to support the jury's verdict. The court also held that the employer did not have to make certain that the ladder was safely secured since neither party had any knowledge that there was any danger of the ladder slipping while in use. Affirmed.

Judd v. Chabek; California District Court of Appeal, Second District, Division Two. No. 23, 155. August 4, 1958.

New Program for Maintenance Conference

A broad revision of session topics will feature the tenth Plant Maintenance & Engineering Conference, it was announced by Clapp & Poliak, Inc., New York, producers of the conference and the concurrent Plant Maintenance & Engineering Show. Almost one-third of the topics to be discussed will be new to the program.

Both show and conference will take place at the Public Auditorium, Cleveland. The show will run for four days, January 26–29, inclusive, and the conference for three days, January 26–28, with 61 sessions.

Almost 400 companies will demonstrate equipment, services and other products designed to keep plants and machinery in operation at the lowest possible cost. The show is one of the largest and best-attended annual industrial expositions in the country.

The opening session will be devoted to a detailed study of the maintenance system of a nationally-important manufacturing company. Ten of the sessions will be round-tables devoted to the special problems of individual industries. Round-tables devoted to the nuclear industry, assembly plants and the abrasive products industry are on the program for the first time. Other industries which will get special attention are metal working and metal-fabricating, chemical, electrical manufacturing, petroleum processing, pulp and paper, foundries, and research and development laboratories.

General-Topic Sessions

Twenty of the sessions will consider general problems affecting all plants and each will be repeated to permit visitors to choose the date of attendance. Among the new topics to be introduced will be "Industrial Engineering in Maintenance," "Maintenance Materials," "Maintaining Utilities," "Designing and Administering a Preventive Program for Control Instruments" and "Maintenance by Outside Contractors."

"Counteracting Air and Water Pollution," and welding, which were introduced into the program last year proved so popular that sessions on the same subjects will be held this year. Topics not on last year's list, but which are being restored, include "Basic Procedures in Building Maintenance" and lubrication.

Other topics are "A Successful Case in Planning and Scheduling," "Economical Use of Electric Power," "Setting and Maintaining Sanitation Objectives," "Why Safety Is Essential and How to Insure It," "Preventive Maintenance," "Training," "Labor Relations in Union Shops," "Maintenance in Small Plants with up to 50 Maintenance Employees," "Maintenance in Medium Size Plants with up to 500 Maintenance Employees" and "Maintenance in Large Plants."

Advance registration cards, conference and hotel information may be obtained from Clapp & Poliak, Inc., 341 Madison Ave., New York 17, N. Y.

THE FIRE FRONT

9-Month Losses High

Estimated fire losses in the United States during September amounted to $73,303,000, the National Board of Fire Underwriters has reported. This loss represents an increase of 1.4 percent from losses of $72,264,000 reported for September, 1957, and a decrease of 2.9 percent from losses of $75,491,000 for last August (1958).

Losses for the first nine months of 1958 now total $810,811,000, an increase of 4.1 percent over the first nine months of 1957, when they amounted to $778,597,000. These estimated losses include an allowance for uninsured and unreported losses.

Why the Fires?

Fire safety can be engineered into buildings, but the big job is to 'engineer' carelessness out of humans, Percy Bugbee, general manager of the National Fire Protection Association told the Greater Cleveland Saftey Council's industrial fire prevention dinner.

"If tomorrow is an average day in these United States, I predict that there will be 5300 outbreaks of fire," said Mr. Bugbee. "About 2600 of these fires will occur in buildings and 1300 will be in ordinary one- and two-family homes. Thirty-two people, mostly old people and young children in small homes, will die as a result of these fires. The property loss will be $3.5 million.

"Practically all this waste of lives and destruction of property can be chalked up to human carelessness," he declared.

Propertywise, the biggest single loser from fire is industry, Mr. Bugbee pointed out. Industrial fires take an annual toll in excess of $200 million according to records maintained by the National Fire Protection Association.

"Industry can't afford a $200 mil-

(Continued on page 34)

You Could Be Next

Fire losses in this country reached the highest point in history in 1957. Destruction of almost $1,280,000,000 worth of property in more than two million fires was recorded in 1957, according to an analysis just completed and published by the National Fire Protection Association.

This was an increase of approximately $48,350,000 over 1956, and the third year in a row that record-breaking totals have been registered, the independent non-profit fire safety organization reported.

Fire damaged or destroyed 530,000 dwellings in 1957, causing a loss of approximately $276,250,000. Both figures are new highs, representing an increase of 6,500 in number and $16,250,000 in dollar cost from the previous year.

Damage to all buildings was up $52,115,000, to a total of $1,068,115,000, with 843,900 structures involved. A $24,540,000 increase in manufacturing plant losses, plus the rise in dwelling losses, were partly responsible for the increase.

There were an additional 1,181,600 fires not involving buildings—principally aircraft, motor vehicles, forest, ships, rubbish and grass fires —which accounted for an estimated $211,811,000 loss.

The organization's Fire Records Department annually compiles estimates of the nation's fire causes and fire losses from reports submitted by federal, state and local fire authorities, as well as from industrial and other sources concerned with fire. Covering uninsured as well as insured losses, the compilation is rated the most complete and accurate report of U. S. fire losses and fire causes.

Among building fires, there was a marked decrease—$18,450,000—in warehouse losses. Hospital and other institution losses declined about $2,934,000. Schools and colleges recorded a drop of $2,625,000 in losses.

Aircraft fires numbered 200 in 1957, a decline of 50 from the previous year. Losses were $115,000,000 compared with $130,000,000 in 1956. Motor vehicle fires were also down, from 173,500 to 160,000, and losses declined from $18,600,000 to $17,200,000.

All causes registered increases over the previous year, except two, the NFPA reported. Lightning fires in buildings declined by 15,400, with a corresponding decrease of $5,783,000 in losses. Fires caused by electrical wiring and other fixed services decreased by 1,900 in number and $10,480,000 in loss.

What causes all these destructive fires?

1957 FIRE CAUSES

CAUSE	NUMBER OF FIRES	DOLLAR DAMAGE
Smoking and matches	130,800	$ 71,900,000
Heating equipment	117,900	112,900,000
Electrical	113,500	162,000,000
Rubbish	62,400	21,108,000
Flammable liquids	50,200	37,785,000
Chimneys and flues	37,000	31,150,000
Children and matches	38,500	19,000,000
Lightning	29,800	29,757,000

Can You Afford For the Fire

by **JAMES H. SNYDER**
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Peoria, Illinois

Fire is an accident, an unexpected occurrence usually involving loss and often accompanied by personal injury. Of major concern to all in preventive work is, of course, preservation of human life. Of equal concern is the ability of employers to continue their business. The preservation of property, physical assets and work places of the employees follows as an obvious necessity.

To pinpoint the realities of fire protection, the title of this article is in the form of a question: **Can you afford to wait for the fire department?** One good question deserves many others, and here are some additional questions that anyone concerned with management, safety or fire might well ask himself:

Is your city fire department readily available?

How fast can they come to your plant?

There may be a multiple fire situation; for example, the fire department may have to give priority to a fire at a school or hotel. Accordingly, what can you do without them?

Have you established sound procedures and good relationships with the city fire department? It would be well to remember that the fire department may not necessarily be familiar with your:

Plant Layout
Plant Processes
Properties of Products
Properties of Raw Materials
Built-In Fire System
Its Location
Its Effectiveness
Its Limitation.

It is therefore necessary to establish an in-plant guidance group to work with public fire officials.

In-Plant Fire Safety

Those responsible for fire safety in your plant should be aware of the many problems encountered when a fire breaks out and should know what to do. The following topics, however, may refresh their thinking.

Evacuation
- When your own building is on fire
- When nearby buildings are on fire

Direction of Fire Department
- To proper building
- Private wire
- To preserve fire department's apparatus in relation to nearness to fire

Paths of Evacuation
- For safety of personnel
- To minimize confusion of arriving fire department

Use of Volunteer Fire Department
- Lights
- Portable intercommunication system
- Proper rescue equipment—masks, etc.

Use of Search Parties
- Rest rooms
- Isolated offices
- Showers and lockers
- Janitor closets

Communications
- Call in volunteer fire department
- Call in key personnel
- Call in executives
- Call in public press, radio & TV

Telephone Services
- Incoming calls block switchboard
- Coins for public telephone

to Wait Department ?

Need for Specialists' Services
- Craftsmen
- Doctors
- Nurses
- Ambulance
- Engineers

Need for Salvage
- Vital records, formulae, cash, tax stamps, etc.

From the above you may have concluded that pre-planning for prevention is just as vital as knowing what to do when trouble strikes; and it is. Pre-planning and inspections cover a lot of territory, but they pay off. Here are some examples of areas that should be given thorough consideration.

1. What do you know about the properties of your raw materials and products:
- **When subjected to heat?**
- **When subjected to burning?**
- **When subjected to water?**

2. What is the condition of sewers and drains:
- **Where ultimately exhausted?**
- **Interconnected?**
- **Possibility of siphoning?**

3. How about your fire pump:
- **Standards for starting?**

4. What is the result of possible diversion:
- **Boilers?**
- **Process coaling—possible vacuum and implosion situations?**

5. Have you considered the results of interruption in electrical services? What else will it affect? Where is this affected equipment located? Will this equipment, in turn, affect other equipment in other locations?
- **Will it affect:**
- **Sump pumps?**
- **Other lines?**
- **Well pumps connected to fire system?**
- **Desirable ventilation?**
- **Elevators?**

6. How about the movement of freight cars or trucks?
- **Especially those containing flammable liquids or combustible materials?**

7. What about pumping procedures:
- **Between buildings?**
- **To tanks—inside, outside?**
- **To and from tank cars?**

8. What is the effect of natural draft:
- **Favorable?**
- **Unfavorable?**

9. Are you aided by floors or walls serving as fire stops:
- **Processes, piping or equipment passing through floors?**

10. In scuppered areas:
- **Piping and openings caulked?**
- **Capacity sufficient?**

11. Do you have container hazards:
- **Full, partially full, empty tanks and drums?**
- **Need to cool?**

12. Do you know about your heating gas lines:
- **Where terminated?**
- **How shut off?**

13. Air ducts and vacuum systems:
- **Will they transmit burning material?**
- **How are they shut off?**

14. How about windows, doors:
- **Open?**
- **Shut?**
- **Are closers desirable or undesirable?**

15. What about the operation of fire curtains:
- **Where?**
- **What effect?**

16. Do you have obstructed access to:
- **Bridges?**
- **Railroad tracks?**
- **Locked gates?**
- **Locked buildings?**

No safety man would be so thoughtless in his reasoning as to fail to plan for the necessary actions in an actual fire or explosion. But proper and productive preplanning goes even further. It takes us so far back into the basics of fire prevention and control that **the assistance of a fire department may never be required.**

Can you afford to wait for the fire department? If you haven't pre-planned for fire, you'll have to wait passively, even if you can't afford to.

If you are ready for fire, you are in a better position to wait actively for the fire department. The odds are all favorable that the occurrence will be small, that it will be easy to control, and that the loss will be at a minimum.

From an address presented at the 45th National Safety Congress.

National Fire Codes

Important changes in fire safety standards are incorporated in a new and revised edition of the National Fire Codes published by the National Fire Protection Association, it was announced by Robert S. Moulton, technical secretary of the Association.

The six-volume 1958 edition is a compilation of the 170 standards developed by NFPA in the fields of flammable liquids and gases, combustible solids, dusts, chemicals and explosives, building construction and equipment, extinguishing equipment, electrical, transportation and miscellaneous operations.

New material in the 1958 edition includes 38 new or revised fire safety standards adopted at the 1958 NFPA Annual Meeting. It also incorporates all amendments approved by the NFPA Board of Directors up to and including July 30, 1958.

The six new volumes, with a total of 4800 pages, by title and content are:

Volume I—Flammable Liquids and Gases (35 standards, 896 pages)

Volume II—Combustible Solids, Dusts, Chemicals and Explosives (35 standards, 656 pages)

Volume III—Building Construction and Equipment (31 standards plus an informative discussion of building codes and references to model codes, 744 pages)

Volume IV—Extinguishing Equipment (33 standards, 1136 pages)

Volume V—Electrical (The National Electrical Code, 1956 edition, including interpretations and interim amendments to July 30, 1958, plus six other NFPA electrical standards and a digest of the electrical provisions of 76 other NFPA standards, 720 pages)

Volume VI—Transportation and Misc. (28 standards on air, marine, bus and truck transportation and salvage, plus a comprehensive review of applicable government regulations, 672 pages)

The codes, in keeping with the traditional objectives of the NFPA, are offered as a suggested basis for safety to life and property from fire without causing undue inconvenience and expense.

Purely advisory so far as the National Fire Protection Association is concerned, they are used widely in the United States, Canada and abroad by property owners, legal and insurance interests, and others responsible in the field of fire safety.

Many of these standards are subsequently adopted and published as the official standards of the National Board of Fire Underwriters, the Canadian Underwriters Association, and other organizations.

The National Fire Codes, seven dollars per volume, may be obtained from the Publications Department, National Fire Protection Association, 60 Batterymarch Street, Boston 10, Massachusetts.

Fire Ladders and Hose Couplings

New recommendations on fire department ladders are covered in a pamphlet just issued by the National Fire Protection Association. Important revisions in NFPA Standard No. 193 include recommendations on load limits of ladders, how often ladders should be tested, proper methods of inspecting and preparing ladders for testing, along with test procedures and test equipment.

Extensively illustrated, the material on both ground and aerial ladders is particularly useful to fire chiefs and fire department master mechanics. The revised standard was prepared by the NFPA Committee on Fire Department Equipment and adopted at the Association's annual meeting.

Concurrently, revisions were adopted in NFPA Standard No. 194 on Fire Hose Couplings. The new edition of this standard contains a sketch showing characteristics of the National Standard fire hose coupling screw thread. There are also revisions in the dimensions of fire hose couplings and suggested washer dimensions.

Copies of Fire Department Ladders (NFPA No. 193, 22 pages, 50¢) and Fire Hose Coupling (NFPA No. 194, 16 pages, 35¢) are available from the National Fire Protection Association, 60 Batterymarch St., Boston 10, Mass.

Why the Fires?
(from page 31)

lion loss. It particularly can't afford the intangible losses—like interrupted production, losses of jobs for its workers, loss of competitive advantages—which a major fire in a plant always brings," Mr. Bugbee said.

It is the major fires which constitute the most critical problem in fire waste: "There were 422 large loss fires in the United States last year. This very small number of fires caused 25 percent of the loss from fires during the year.

"Ohio alone suffered 21 of these large loss fires."

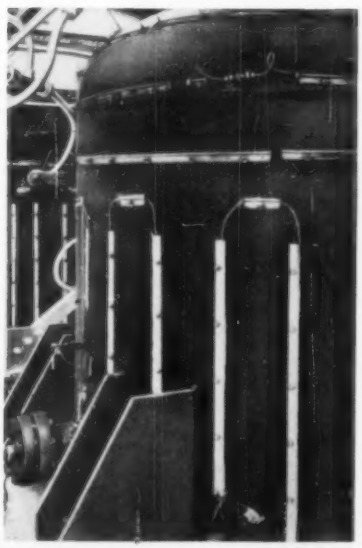
"What caused these fires is not as important as what factors let them grow to such serious proportions," he said. "Principal reasons were lack of division walls, unprotected vertical openings, combustible interior finish, lack of appropriate fire protection such as automatic sprinklers, delayed alarms, and lack of private fire brigades."

"Any plant or business property can maintain fire safety if it wants to," Mr. Bugbee declared. "The proof of this lies in the fact that some of our major industries with large and obvious hazard problems often maintain the best fire records of all."

ribbon alarms for fire & heat

SENSING ELEMENT—The coil of tubing is the exterior of the sensing element in overheat detectors. A schematic cross section is shown in middle of the coil. Components, from outside in, are: inconel tubing to protect core against minor dents and abrasions, hermetically sealed air space to separate core from protective tubing, ceramic thermistor core which loses resistance when heated, and embodied wires that are connected to a monitoring electrical circuit.

A unique overheat-fire detector, long used and proven in airplane engine applications, has recently been adopted by industry. According to the manufacturer, more than twenty of the country's leading corporations now use continuous strip overheat systems to give an early warning of an overheat condition for a multitude of production processes.



Continuous strip overheat detector tubing is mounted at intervals over big vat. When dangerous temperature is reached, the resistance of tubing's ceramic core drops, allows current flow between two wires in core. When predetermined resistance is reached, monitoring control unit sets off alarm.

The strips come in variable lengths up to 20 feet and are coupled together to form longer strands. They are of flexible Inconel tubing which contains two wires imbedded in a ceramic, thermistor core. The tubing is attached to the surface of the piece of equipment to be protected. Spacing of the strands and the patterns of applications are subject to the degree of overheat coverage desired and the shape of the equipment being protected.

Normally a voltage not to exceed 10V (AC or DC) is applied to the circuit. At normal operating temperatures, the ceramic offers high resistance to the flow of current between the two conductors. However, when subjected to temperatures above this point, the resistance of the ceramic drops rapidly and permits an increased flow of current between the two wires.

When a predetermined resistance is reached, the monitoring control unit causes an alarm to sound. When the temperature returns to normal, the high resistance of the ceramic is restored and the alarm automatically shuts off.

Continuous strip overheat detectors have an alarm range of from 200–1000 degrees F. However, the strips can be subjected to temperatures as low as –65 degrees F.

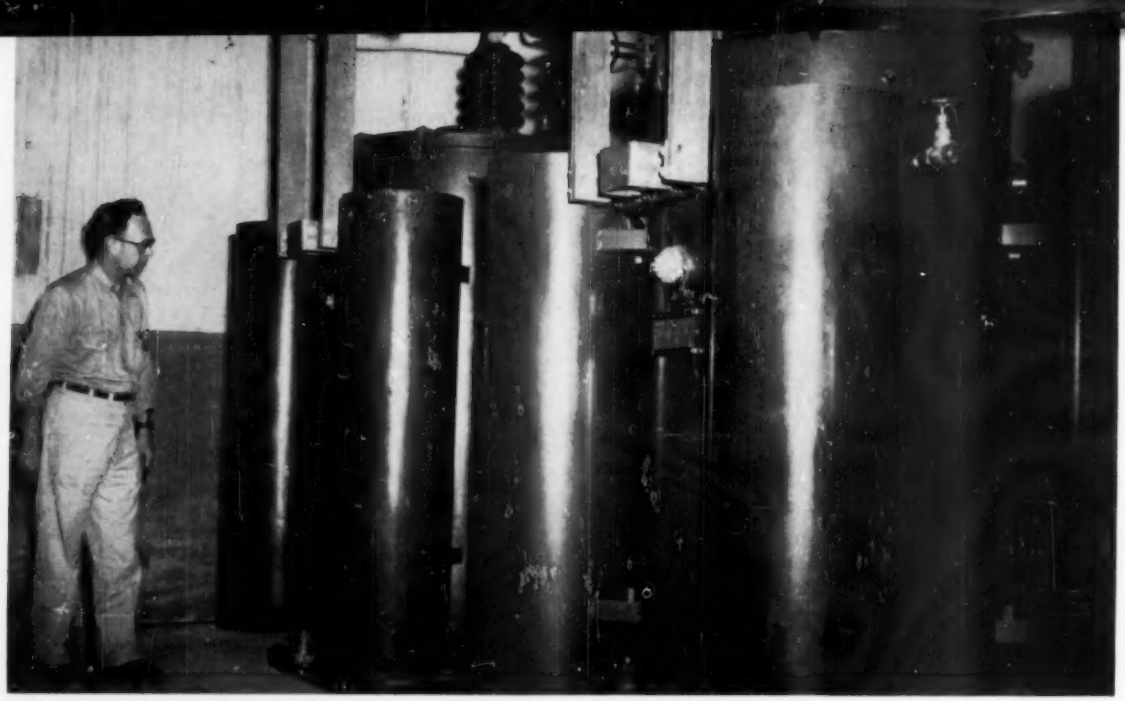
While these systems normally are used for overheat detection only, by adapting the detector strip and monitoring equipment they can be used for the detection of dangerous temperatures above and/or below a normal temperature range.

In addition to giving a prompt alarm to a dangerous temperature or rate-of-temperature rise which might ruin work-in-process or damage production machinery, continuous strip detectors monitor the temperature along every inch of the strand, not only in spots as do thermocouples. As such, it picks up abnormal changes in temperature in large zones as well as in localized spots.

The rugged sensing element is impervious to oil, dirt and solvents. If damaged or broken, it still continues to monitor, except at the point of rupture. Even if more than one break occurs, the system functions except between the points of rupture.

The simplicity and flexibility of continuous strip detection systems make them extremely easy to install

(Continued on page 37)



Two of the three 500 KVA transformers in the 33,000 volt electrical substation recently installed in this Pennsylvania plant. Special safety measures have been taken to protect against possible electric shock and fire in the transformers.

FIRE SAFETY FOR INDOOR SUBSTATION

A new 33,000-volt electrical substation—the first of its size ever installed indoors in the Philadelphia Electric Company service area and possibly the first in the country—is now in operation at the Collegeville, Pa., plant of Superior Tube Company.

The inside location permits future expansion of the physical plant in any direction without moving the substation to make room for new construction.

The new electrical substation, which is located in the basement of the large mill, doubles the plant's transformer capacity. Both it and Superior's first substation, located outdoors on the west side of the plant, have three 500 KVA transformers. The new substation has indoor A.C.B. drawout switch-gear to distribute power to various parts of the plant.

Installing the substation indoors required special safety measures. The wires from the 33,000-volt primary line were sheathed in lead and brought underground into the basement location. Ewald and Miller Consulting Engineers did the design work on the new substation. Philadelphia Electric Company provided technical assistance to the local electrical contractor—J. F. Davis of Valley Forge, Pa.—in making the underground cable installation.

The most difficult problem was to provide ventilation to cool the transformers while making provisions to contain and put out transformer fires should they occur.

Superior's engineering department designed and built a special concrete block vault to house the three transformers. Cooling air flows into the vault through a screened opening in one wall, over the transformers and through a duct opening in the opposite wall and then

As a guard against fire hazard, a heavy concrete-block vault has been built to house substation's three transformers. Air for cooling is drawn through grilled wall opening at right, passes over transformers and leaves by way of opening in opposite wall. If fire should occur, metal slats inside grilled aperture close automatically and extinguish fire by immediately cutting off the air.

to the roof. For fire protection, heavy metal slats, resembling a Venetian blind, are installed inside the opening through which the air enters. They are held open with a chain, one link of which is made from metal with a low melting point. If fire breaks out, the link instantly melts, and the metal slats close to seal off the opening. With the air supply cut off the fire quickly dies out.

The new substation installation has been approved both by the Philadelphia Electric Company and the Factor Mutual Fire Insurance Companies.

Pictures by Courtesy of Superior Tube Co.

Do Your Extinguishers Work?

According to the Fire Equipment Manufacturers' Association, Inc., the average life of portable fire equipment used in various institutional and industrial buildings is 15 to 20 years. Their deterioration in most cases below and even within these limits is the result of improper maintenance. FEMA noted that most users could realize longer service from their portable fire equipment if they conducted a fundamental preventive maintenance program.

How Costly Are Fires?

A survey recently conducted by the Fire Equipment Manufacturers' Association, Inc., revealed that fires in all parts of the nation last year destroyed over a billion dollars worth of property. These fires also were responsible for over 11,000 deaths. FEMA pointed out that the increased use of portable fire extinguishers, if properly distributed and maintained, could reduce these figures considerably. More than half the above loss was in business and industrial establishments. The dollar loss caused by these fires was only a fraction of the total destruction. The indirect losses, in medical costs, wages and production lost, and business failures, was probably two or three times greater.

Ribbon Alarms

(from page 35)

and almost maintenance free. Its adjustment features and its adaptability for use with standard recorders give the product unusual versatility.

They are currently being used for the temperature control of petro-chemical operations, regenerative air heaters in power generating systems, atomic combustors, liquid oxygen storage facilities, heat treating equipment, and the like.

The overheat detection system is designed around a two-wire sensing element because the wires can be located close to each other within the core and at the same time be kept a more uniform distance apart than wire and sheath in the one-wire sensing element. This permits the maximum insensitivity and accuracy of operation.

One problem inherent in the two-wire detector, however, was the need to prevent the ceramic core from cracking. For if the core should crack the closely positioned wires might touch and give a false alarm.

The designers took three steps to prevent this: 1. They specified a serrated core to allow it to bend more easily; 2. They provided for a small, hermetically sealed air space between the core and the inner diameter of the metal sheath to help prevent the tubing from rubbing or otherwise damaging the core and thereby starting a crack. (The hermetic seal also keeps out moisture, which can affect the electrical resistance of the core.); 3. They specified an unusually clean inner diameter in the tubing sheath to prevent foreign matter from coming in contact with the ceramic core and to eliminate imperfections in the ID of the tubing which might nick the core.

Inconel tubing was selected for the overheat detectors primarily because of its excellent heat resistance. It is also inert to the core material and has the necessary heat conductivity to permit fast response to temperature changes.

A source for further information about the continuous-strip detectors can be obtained on inquiry to the Editor.

Picture credits: Top—Superior Tube Company; Below—Walter Kidde & Co., Inc.

Injury Rates Low

Injury rates for manufacturing rose slightly in April, May and June, 1958, but the average for the quarter was only a fraction above the record low levels which prevailed in the two preceding quarters, according to preliminary figures compiled by the U. S. Department of Labor's Bureau of Labor Statistics.

From 9.6 disabling injuries per million hours worked in March, the rate rose fractionally in each of the next 3 months, reaching 10.2 in June. The average of 10.0 for the 3 months, however, was not significantly different from the record quarterly low of 9.9, which prevailed in the fourth quarter of 1957 and the first quarter of 1958. The second-quarter rate for 1958 was 12 percent below the corresponding rate for 1957 and 17 percent below 1956.

Most of the changes in injury rates of individual manufacturing industries between the first and second quarters of 1958 were small and there were about as many increases as decreases. Comparisons of rates for the first 6 months of 1958 with the corresponding period of 1957, however, showed decreases of one full frequency-rate point or more for 76 industries, or over half of the 138 surveyed.

Greatest Improvement

The greatest improvement in the injury record for the first 6 months of 1958 over 1957 was reported for steel foundries, with a decrease from 21.8 to 13.4. The 6-month rate for miscellaneous wood products decreased from 28.8 to 21.7; boiler shops products, from 26.4 to 19.9; cold-finished steel, from 13.2 to 7.2; and miscellaneous textile goods, from 13.9 to 8.9.

Rates of less than 5 disabling injuries per million hours worked during the first 6 months of 1958 were reported for 21 industries. The lowest rates were recorded for: synthetic rubber—2.1; tires and inner tubes—2.1; explosives—2.2; radio tubes—2.2; aircraft—2.6; synthetic fibers—2.7; miscellaneous communication equipment—2.7; and electric lamps (bulbs)—2.9.

From July 29, 1955 to March 6, 1958, the 2000 employees of Jack & Heintz, Inc. worked at their jobs without a lost-time accident. The J&H total of 11,342,017 man-hours establishes a new no-injury record for the Aircraft Parts and Sub-Assembly Industry classification of the National Safety Council. The previous record in this classification stood at 10.2-million man-hours.

For this outstanding achievement, Jack & Heintz has received the Award of Honor, highest recognition given by the N.S.C.

• • •

The Navy's Bureau of Supplies and Accounts sets a new safety record by winning the Navy Safety Award this year for the tenth time since the program was started eleven years ago.

The Honorable Richard Jackson, Assistant Secretary of the Navy (Personnel and Reserve Forces), recently presented a certificate and letter signed by the Secretary of the Navy to Rear Admiral Ralph J. Arnold, Supply Corps, USN, Chief, Bureau of Supplies and Accounts.

To earn the annual award, Navy bureaus and activities must average below the over-all Navy accident rate for both industrial manpower and motor vehicle accidents. In accidents per million man-hours of work, the Bureau of Supplies and Accounts held a 1.74 frequency and a 247 severity rate compared to the over-all Navy 2.17 frequency and 303 severity.

The Bureau's motor vehicle accident rate was .75 per 100,000 miles against the all-Navy rate of 1.15. Both statistics indicate improvement over safety records of last year. An intensive and continuing "safety awareness" program within the Bureau of Supplies and Accounts is credited with keeping men and machines from joining the casualty lists, according to Mr. O. D. Maxwell, head of the Bureau's safety branch.

• • •

The Dana Corporation has presented a safety award in the form of a plaque to its Parish Division, Reading, Pa. The award commemorates the completion of more than a million man-hours without a disabling injury.

• • •

The importance of employing qualified handicapped people was cited recently as a New York City optical firm received an award for hiring and increasing industrial acceptance of disabled people.

Mr. Philip Salvatori, President of Obrig Laboratories, Inc., accepted the award from the Institute for the Crippled and Disabled before an audience of New York government, business and labor leaders.

Mr. Salvatori said that he had established a policy of employing qualified handicapped people after he himself had been successfully rehabilitated following a disabling automobile accident. Many of his handicapped employeees are graduates of the Institute.

"I have never had to regret the hiring of a handicapped person who had been properly trained for our type of work," Mr. Salvatori said. "Disabled people have to work harder than the able-bodied to prepare themselves for employment. Modern rehabilitation, such as goes on here at the Institute for the Crippled and Disabled, is very effective in matching a man's abilities and a job. I have yet to meet a rehabilitated handicapped man who did not have an overwhelming desire to succeed."

• • •

The Transportation Corps' highest safety award, the Award of Honor, has been awarded to the U. S. Army Transportation Terminal Center, Bay Area at Oakland, California for outstanding achievement in accident prevention during Fiscal Year 1958, it was announced by Major General F. S. Besson, Jr., Chief of Transportation. Second highest recognition, the Award of Merit was won by the U. S. Army Transportation Training Command, Fort Eustis, Virginia.

Presented annually to installations or activities which show the greatest percentage improvement in accident prevention in the principal categories of land, water and air transportation and among military, civilian and contractor personnel, the awards were made for the first time this year under the Corps' recently intensified Safety Program.

Significant is the fact that both of the winning installations are engaged in activities which are subject to high accident incidence rates. Bay Area Terminal, a major ocean port facility is engaged primarily in the loading and unloading of cargoes aboard sea going vessels. The Training Command is the principal training facility of the Corps where troops are schooled in the operation of harbor craft, amphibious vehicles, railway locomotives, trucks, cranes and in the repair and maintenance of Army aircraft.

• • •

The Milk Industry Foundation received the National Safety Council's Association Safety Award at a luncheon during the National Safety Congress. The Award was presented to MIF for administering a safety program for its members, which has reduced the frequency of occupational accidents in the milk industry by 18 percent during the last five years. The average reduction in accident frequency for

all industries was only 16 percent over the same period.

Mr. Carl C. Clements, chairman of MIF's Accident Prevention Committee, which established the safety program, accepted the award for the Foundation. Mr. Clements also is director of safety for the National Dairy Products Corporation, New York. Mr. Perry R. Ellsworth, assistant to the executive director of the Foundation, supervised the Foundation's safety program.

• • •

Thirteen gas utility and pipeline companies have received the American Gas Association's Safety Achievement Awards at a luncheon during the A.G.A.'s 40th annual convention.

The awards, made annually to companies with the lowest accident frequency rates in the industry, were presented by Robert W. Otto, A.G.A. president.

Honor awards were presented to: **Natural Gas Companies**—Northern Indiana Public Service Co., Hammond, Ind.; Central Illinois Light Co., Peoria, Ill.; Iowa Public Service Co., Sioux City, Iowa; Wisconsin Southern Gas Co., Inc., Lake Geneva, Wis.; **Transmission Companies**—Transcontinental Gas Pipe Line Corp., Houston, Texas; Southern Natural Gas Co., Birmingham, Ala.; Michigan Gas Storage Co., Jackson, Mich.; Wilcox Trend Gathering System, Inc., Dallas, Texas; **Manufactured and Mixed Gas Companies**—Iroquois Gas Corp., Buffalo, N. Y.; Citizens Gas & Coke Utility, Indianapolis, Ind.; The Hartford Gas Co., Hartford, Conn.; Superior Water, Light & Power Co., Superior, Wis.; **Liquefied Petroleum Gas Companies**—Elizabeth & Suburban Gas Co., Elizabeth City, N. C.

• • •

The Gilmer plant of the United States Rubber Co. received the National Safety Council award of honor for the completion of more than 3 million man-hours of work without a disabling injury. The period covered by the award ran from Feb. 1, 1955, through Aug. 13, 1958, a total of 3,013,557 hours.

SAFETY FACTS for Industry

MOST SAFETY DIRECTORS INSIST ON Safe-Hi LADDER SHOES!

BECAUSE Safe-Hi LADDER SHOES ARE U/L APPROVED FOR ALL SURFACES! THIS EQUIPMENT ENABLES WORKERS TO PERFORM LADDER JOBS WITH SAFETY* AND EFFICIENCY—NO NEED OF "HELPER" TO HOLD BASE OF LADDER!

* A 1949 REPORT OF THE N.Y. WORKMEN'S COMPENSATION BD. SUMMARIZING 27,000 FALL ACCIDENTS, DISCLOSED SLIPPING LADDERS IS THE PRINCIPAL CAUSE OF LADDER ACCIDENTS.

DIAGRAM SHOWING ACTUAL HOLDING POWER OF Safe-Hi LADDER SHOES UNDER CONDITIONS INDICATED FROM AUTHENTIC MEASURED TESTS.

SMOOTH IRON-SOAPY
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WAXED HARDWOOD-DRY
LINOLEUM-DRY
LINOLEUM-WET
SMOOTH IRON-DRY
TERRAZZO-DRY, SMOOTH CONCRETE-WET
WAXED HARDWOOD-WET
TERRAZZO-WET

SELF SHARPENING SPIKE FOR ICE SNOW, GRAVEL ETC.

ALSO AVAILABLE—NON-SPARK LADDER SHOES FOR REFINERIES, GRAIN ELEVATORS, MUNITIONS PLANTS AND ALL INDUSTRIES WHERE SPARKS ARE A HAZARD.

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POLE GRIP HOLDS TOP OF LADDER ON ANY POLE, PIPE OR CORNER.

WALL GRIP HOLDS TOP OF THE LADDER SECURELY ON ALL SMOOTH WALLS.

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(For details, use Key # Y-9 on card on page 1)

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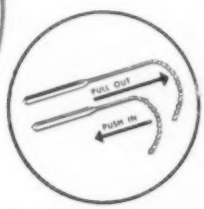

Adjustable Retrax Temples

Featherlight TUC-AWAYS

A new thick plastic frame gives greater utility and longer life to TUC-AWAY, the safety spectacle that's so light and comfortable that workers hardly know they're wearing them.

Interchangeable, optically correct EYE SAVERS Lenses are safe and shatter-proof. They snap-in and snap-out for easy lens replacement.

Plastic or Metal Retrax temples telescope in and out for perfect fit — can be adjusted by the wearer.

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Quality Eye Protective Equipment — Made by the Leaders in Plastics

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Film on Corrosion

A new film on corrosion tells what causes anodes and cathodes to form on steel surfaces, how they produce electrolytic corrosion, what can be done about it. It discusses inhibitors, alloys, hot-dip galvanizing, cathodic protection, metallizing, organic coatings and Dimetcote inorganic zinc coating. Case histories show how corrosion problems are solved in various industries. In 16mm color with sound. Running time 19 minutes. Many useful ideas for those interested in corrosion control. For showing write: Amercoat Corporation, 4809 Firestone Blvd., South Gate, Calif.

Punch Press Guarding

This film, "Punch Press Guarding," depicts the important duties of the press set-up man. It shows many different types of press, the set-ups required to provide safe guarding, and the adjustments that can be made. Actual operations are shown, such as blanking, shearing, forming and embossing.

The purpose of the 11-minute, color film is to show to management and employees that there is a guard which will adequately protect workers on almost any type of punch press operation and that guards must be properly adjusted.

The punch press has a record of producing on a percentage basis more injuries resulting in permanent disability than any other type of mechanical equipment used in the manufacturing industry. After showing a few shocking examples of the injuries that have been experienced on these machines, the film goes on to show various guards that are available, the types of operation for which they are best suited and the proper set-up of each. The important part the set-up man plays in providing safe operation of punch presses is emphasized. The film was produced by Campbell Productions for Industrial Accident Prevention Associations of Ontario.

Prints of this film are available on a sales basis of $115 from International Film Bureau Inc., 57 E. Jackson Blvd., Chicago 4, Ill. In Canada: Order from Margery Weiss, Box 3040, Ottawa.

Disney Safety Film

A mythical town overrun with a very real traffic fatality record and the method used to overcome the problem is the basis for Walt Disney's newest humorous and thought provoking film, "The Story of Anyburg, U.S.A."

With the release of the new film, Disney completes a trilogy of safety films each in full animation —each taking a light approach (and deadly aim) on basic safety problems. "Motor Mania," starring Goofy in a dual role as the mild-mannered pedestrian as well as the maniacal driver, inaugurated the series. Donald Duck, starring in "How To Have an Accident In the Home," was the second in the group and proved conclusively that "—accidents don't just happen by themselves—they have to be carelessly planned in advance." "Anyburg, U.S.A." stars Disney's newest character—the Defense Lawyer—who neatly and effectively spotlights the criminal-at-large on today's highways.

Already the recipient of numerous safety awards, "Anyburg, U.S.A." is available for long term lease or daily rental through the Educational Film Division, Walt Disney Productions, Burbank, California.

Medical Careers Dramatized In Film

A new 16mm sound motion picture, "Helping Hands for Julie," designed to encourage young people to seek careers in medical health fields, is being offered for free loan to high school guidance counsellors, community leaders and members of the medical profession for group showings. The 28-minute film, presented by the American Medical Association, the American Hospital Association and E. R. Squibb & Sons, is available from Association Films, Inc.

The film tells of seven-year-old "Julie Morgan" who enters a large, modern hospital with an unknown sickness. The story revolves around her fight for life. Crisis mounts and the "helping hands" of the medical staff are mobilized into action, swift, decisive, disciplined. Blood counts, urinalysis, spinal fluid speciments, x-rays and constant observation by skilled eyes reveal the answer.

With the diagnosis made, the drugs of the pharmacist, the vital food of the dietician, the restorative work of the physical therapist and the care of the nurse bring "Julie" back to health. Thus the skilled work of doctors, technologists, technicians, nurses and medical records librarians is fulfilled. They all share a common joy and satisfaction when little "Julie" leaves the hospital perfectly well.

The film was produced by Henry Strauss. Educators and group leaders may borrow "Helping Hands for Julie" from the regional distribution centers of Association Films in: Ridgefield, N. J. (Broad at Elm), La Grange, Ill. (561 Hillgrove Ave.), San Francisco, Calif. (799 Stevenson St.) and Dallas, Tex. (1108 Jackson St.).

Foot Saved? Join the Golden Shoe Club

Formation of the Golden Shoe Club, an organization designed to foster and improve the practice of foot safety in industry, was announced at the National Safety Show in Chicago, October 20–24, 1958.

Membership in the club is open to anyone who sustains a foot accident but escapes without injury because of wearing protective safety shoes. Each club member will receive two Golden Shoe Award pins, one for wear on the job, the other for dress wear as a lapel or tie tack. He will also be presented a Golden Shoe Award certificate welcoming him into the club.

Candidates for membership in the club must be certified by their plant safety director and plant manager as having avoided injury in a foot accident by wearing safety shoes.

Complete information on the Golden Shoe Award has been sent to all industrial safety directors in the U. S. Additional information may be secured by contacting Ed Lang, Secretary, Golden Shoe Club, c/o Hy-Test Safety Shoes Division, International Shoe Company, 1509 Washington Avenue, St. Louis 66, Missouri.

New Director of Bureau of Labor Standards

Secretary of labor James P. Mitchell has announced that Arthur W. Motley, a career employee with thirty-eight years experience in Government manpower and employment programs, has been appointed Director of the Bureau of Labor Standards.

The Bureau he will head has various responsibilities in the development and promotion of labor standards—youth employment, child labor, industrial safety and individual State labor laws all come within its interest. It also accepts and houses the financial reports that unions are required to file.

Carbon Monoxide and You

A booklet designed to acquaint the general public with the dangers of carbon monoxide has recently been published by the Public Health Service. The informative pamphlet warns that CO gives no warning, explains why it is dangerous, how people react to it, when CO poisoning is likely to occur, how to prevent CO accidents, and gives first aid measures.

The publication is being introduced to health departments throughout the country for use in their educational efforts. Widespread use is expected by business organizations, community groups and industry.

Copies of this PHS Publication No. 611, "CO and You," may be obtained in quantity lots at $5.00 per hundred from: Superintendent of Documents, U. S. Government Printing Office, Washington 25, D.C.

Dynamometer Applications

Although the word is common enough, a tremendous number of engineers and laymen do not know that there is a marked difference between absorption type and traction load-measuring dynamometers. A special design and application book which contains dozens of "on the job" illustrations has been published by W. C. Dillon & Co., Inc.

Compiled over a period of years, these pictures show how to make spring testers, measure deflection of aircraft wings, check railroad switches, motor torque, etc. with portable traction dynamometers. Each includes pertinent engineering data and related facts. Some 81 pages of material are involved.

Titled "Dillon Dynamometers at Work in the World," the new book is bound between stiff covers and is suited to library and personal file reference. Different fields of endeavor such as automatic, aircraft, marine, rubber are indexed for quick study.

Cost of compiling and printing the Dynamometer Application Book has been figured at well over $5.00 per copy. For a limited time, however, it will be made available to interested engineers and others at only 50¢. To secure a copy, a coin may be Scotch-taped to company letterhead. The edition is limited. Address orders to: W. C. Dillon & Co., Inc., P. O. Box 3008, Van Nuys, California.

Maintaining Grounds

Grounds Maintenance Handbook, the first comprehensive guide for landscaping and maintenance of public, semi-public, industrial, and commercial grounds, has just been published by F. W. Dodge Corporation, New York.

Written by Herbert S. Conover for those professionally responsible for maintenance of grounds of any size, this book is a complete exposition of virtually every aspect of grounds maintenance and development, from the original selection of land, through planting and seeding, to the equipment and methods

necessary to keep it in prime condition. Thoroughly indexed, it is immediately valuable as a quick-reference handbook. Included are chapters on: "Equipment Maintenance and Use" which surveys tools and machinery required or useful in planting and caring for grounds; "Disease and Insect Control" which presents individual articles on specific diseases and insects by contributing experts, in addition to detailed coverage by the author; "Weeds and Their Eradication," showing the most successful methods of controlling each variety; "Maintenance of Roads and Parking Areas" which outlines preferable methods of construction and repair; "Materials Specifications" which considers better methods and materials for roads, pipes, railings, and building construction and preservation.

Herbert S. Conover is Landscape Architect for the New York Power Authority in the development of the tremendous St. Lawrence Power Project. He is well qualified to prepare a work of this scope by over 28 years of experience in grounds development and maintenance. He was formerly affiiliated with TVA as manager of public services, with responsibility for more than 25,000 acres. While with TVA, he developed much of the book's material which proved so useful that it was first published on a limited basis by TVA as a suggested operating manual.

"Grounds Maintenance Handbook" (503 pages) can be obtained for $10.75 from: Dodge Books, 119 W. 40th St., New York 18, N. Y.

Modern Safety Practices

This new book, "Modern Safety Practices" by Russell DeReamer of the General Electric Co., outlines a safety program based on modern management principles, in which the safety engineer is a consultant to the line organization on accident prevention methods. The author's plan places the safety responsibility of the supervisor in sharp focus. Future progress in accident prevention will require giving the line supervisor full responsibility for safety and holding him accountable for results.

The book sets forth DeReamer's factory-and-time-tested ideas on how to encourage the supervisor to take a more active role in the safety program; and how to set up and maintain a training program that will help the supervisor fulfill his safety duties and gain new benefits from his accident prevention efforts.

In addition to the vital role of the supervisor, the book discusses personalized safety training and job hazard analysis, human factors in machine and equipment safety, consultive methods of safety administration and organization for safety engineers, ways of reducing industrial noise and controlling radiation and electrical hazards.

"Modern Safety Practices," illustrated, 357 pages, is available for $7.00 from John Wiley & Sons, Inc., 440 Fourth Ave., New York 16, N. Y.

Chlorate Safety Chart

A large safety wall chart providing instructions for the proper handling of chlorate and perchlorate chemicals has been prepared by American Potash & Chemical Corporation for use by companies active in chlorate and perchlorate application.

The newly prepared wall chart is a digest of safety rules and conduct. It includes subjects such as follows: materials that may ignite if mixed with chlorates or perchlorates, what types of clothing to wear and how to care for clothing when working with the chemicals, how the chemicals should be handled, stored, shipped and unloaded. There also is a First Aid section of instructions in case of accident.

American Potash & Chemical Corporation announced that copies of the safety chart may be obtained by writing the company at 3000 West Sixth Street, Los Angeles 54, California. Because of the specialized fields of application, distribution will be restricted to organizations working with these chemicals, and applicants are requested to identify themselves as to affiliation and the particular application concerned.

Spanish Edition of Safety Guide

The language barrier to industrial safety for Spanish speaking garment workers in this country has been pentrated by the Association of Casualty and Surety Companies and the Inter-American Safety Council. Robert Hagopian, assistant manager, of the Association's Accident Prevention Department, revealed that "Your Guide to Safety as a Garment Worker" has just been issued in an all-Spanish edition. The booklet is one of 61 employee safety handbooks that comprise part of the safety literature published as a public service by the Association.

"This is the first piece of our safety material to be translated into a foreign language," Mr. Hagopian said. "If it proves as useful as we believe it will, other titles will be published in foreign-language editions."

According to Mr. Hagopian, the decision to translate "Your Guide to Safety as a Garment Worker" into Spanish was made after insurance company engineers reported difficulties in getting safety messages across to the large number of Spanish-speaking workers in the garment industry.

"Particularly in the east," Mr. Hagopian said, "the large influx of workers who speak little or no English has caused a language barrier across which it has been difficult to maintain effective accident prevention programs. In recent years the number of Spanish speaking workers who have settled down and found jobs in this country has been on the increase. The garment industry, in particular, has employed many thousands of them and the growing need for special safety literature has led us to this present attempt to penetrate the language barrier."

He added that work on the project was advanced materially by the Inter-American Safety Council, which endorsed the idea and made the actual translation. The Spanish edition, now titled "Guia de Seguridad para el Trabajador en Prendas de Vestir," is available from member companies of the Association, or the Inter-American Safety Council, 2 Rector St., N.Y.C.

Hygienic Guide Series

To date sixty-two "Hygienic Guides" have been prepared by a Committee of the American Industrial Hygiene Association, composed of outstanding authorities in the fields of medicine, toxicology, engineering and chemistry. Each Guide covers a single chemical with the latest available information on maximum allowable concentrations for both short and long term exposures, significant chemical and physical properties, major uses, evaluation of exposures and engineering and medical control procedures with literature references. They form a ready reference for industrial hygienists, medical and safety directors, plant engineers and others concerned with the health and safety of industrial employees.

A complete list of the 62 Guides now available, with information on prices and order form, can be obtained from the American Industrial Hygiene Association, 14125 Prevost, Detroit 27, Michigan.

Industrial Hygiene Report

Short, current reports of industrial hygiene work in progress throughout the country will be contained in a new letter-type publication called "Industrial Hygiene News Report, which will be issued monthly. The October issue was the first.

The "Report" is designed to increase the knowledge of current industrial hygiene work through the dissemination of information, and to report on activities conducted by individuals and agencies throughout industrial, educational, and governmental groups. While the reports will be brief, the publication is based on the premise that the prompt publication of current information will forestall needless duplication of work and also open the way for the pooling of scientific knowledge.

Among the many subjects to be given attention in the "Report" are precautions for the safe handling of hazardous materials, experiences with unusual exposures, control of hazards from ionizing radiation, modifications of standard industrial hygiene equipment, new analytical methods, toxicological tests being conducted, methods for obtaining representative industrial hygiene samples, air pollution problems, noise control methods, and other pertinent data. Also to be included in the contents are announcements regarding personnel changes in industrial hygiene units, meetings of national related associations, and developments of significant industrial hygiene instrumentation or equipment.

The Consultant Editor, Howard N. Schulz, is well known in the field of industrial hygiene. Among other activities in the American Industrial Hygiene Association, he served as Editor of the "AIHA Quarterly" from June, 1955, until March, 1958. The Publisher, D. L. Flournoy, was in charge of editorial and production work on the "AIHA Quarterly" from 1958 through 1957. The publication office of the "Report" is at 1791 W. Howard Street, Chicago 26, Illinois.

Noise Control Conference

Lighter weight construction, new types of interior partitions, increased use of mechanical equipment in buildings all have given rise to a widespread call by builders and architects for more information about noise control in terms they can understand, according to Charles H. Topping, President of the Building Research Institute, National Academy of Sciences. BRI has, therefore, scheduled for January 14–15 at the New Yorker Hotel, New York City, a research correlation conference on "Noise Control in Buildings" which will examine the various facets of the subject in language keyed to the needs of architects, builders, engineers and contractors.

Prominent in the group of nationally known experts who will tackle the problem will be Robert B. Newman of Bolt, Beranek and Newman, Inc., one of the country's leading acoustical consulting firms, who will give a physical demonstration of noise control fundamentals to open the two-day meeting.

Under the chairmanship of John S. Parkinson, manager of building products research for Johns-Manville Corporation, a BRI committee has laid out a program which will deal with the comparatively new noise problems encountered in buildings of all kinds due to increased use of lighter weight construction in exterior walls, floors and interior partitions, and to the use of such mechanical equipment as high velocity air con-

(Continued on page 46)

FIELD TESTING FOR AIR CONTAMINANTS

Many airborne toxic materials can be detected and measured in the field by persons having little or no training or experience. Simple, rapid methods and equipment employing prepared chemical reagents are available for detecting and measuring these materials semi-quantitatively by color changes produced in sensitive chemicals. Carbon monoxide, hydrogen sulfide, hydrogen fluoride, hydrogen cyanide, arsine, mercury vapor, sulfur dioxide, nitrogen dioxide, aromatic hydrocarbons, and lead (as dust and/or fume) are measurable by these methods when present in air below and above their allowable limits.

Simplicity of test methods giving reasonable accuracy has been achieved in two general ways. One way is through convenient packaging of reagents, which provides for immediate use or for their proportionment and use without measurements for formulation. The other way is the development of simple apparatus for removing toxic materials from measured volumes of air. Air samples may be drawn through a filter that retains the toxic material on the surface, impinged on activated material at a controlled rate, or drawn through a bed of sensitized material in a small glass tube. Packed glass tubes may require only the breaking off of sealed ends to prepare for the test.

Color changes that indicate the amount of toxic material in an air sample are commonly measured by comparison with a standard color chart or by the length of a color change in a tube of reactive material.

Reagent quality and quantity may be protected by sealed glass ampoules. The problem of preparing and dispensing unstable indicating reagents requiring a mixture of two or more chemicals is solved by putting them in separate ampoules or bottles to be mixed together at the time of use. For most convenience of use thin glass ampoules are put in a flexible plastic tube with the solution in which the contained reagents are to be mixed. The mixture can be produced without opening the tube by squeezing the tube walls and breaking the glass ampoules and then shaking the mixture. (See Figure 1.)

Air Sampling

Toxic particles in the air may be concentrated on the surface of a filter material by means of a hand pump of known capacity, such as 500 ml. Filters are selected both for high efficiency and filter materials that will not produce interfering color stains with the reagents. Filters are held in a special snap-on cap assembly which provides for different sizes of opening and filter area. In some instances the reagent may be used to impregnate a special filter paper and the air sample is impinged against a spot on the paper.

Field use of this simple type of test apparatus, prepared reagents, and color measurement is illustrated by tests of air containing some of the toxic materials.

Lead dust and fumes in the range of the allowable limit (0.2 micrograms per liter) can be collected by drawing a known volume of air through a fiberglass filter with an area of 1 sq. cm. (See Figure 2.) If lead is present, a pink color is produced after adding a drop of ethanol solution containing a red suspension of

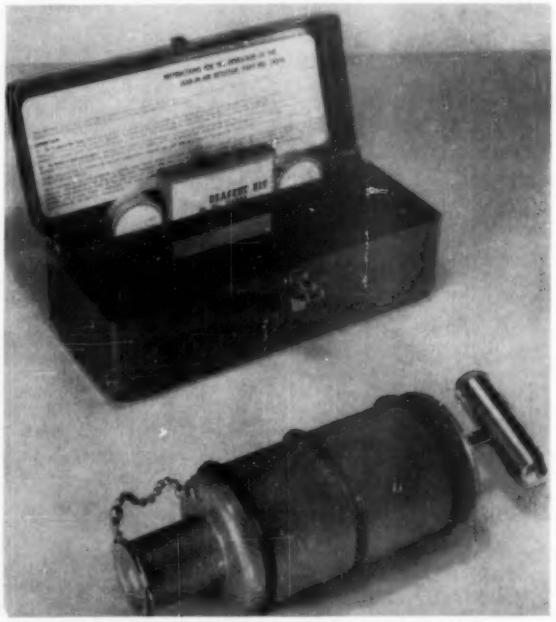

Fig. 2—A lead-in air detector, as shown above, includes a 500 ml. hand pump, with filter-holder, reagents and filters.

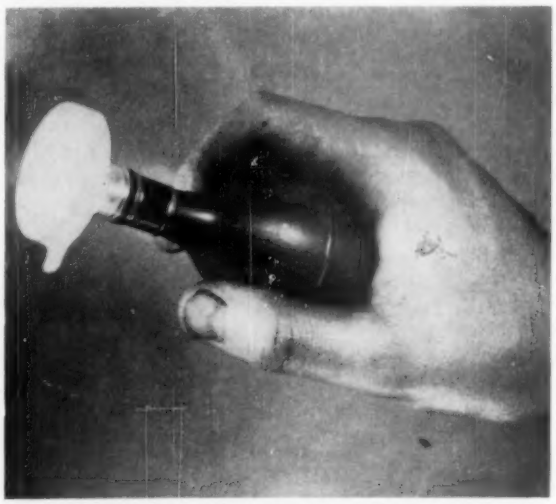

Fig. 3—Hydrogen fluoride test apparatus impinges air on impregnated spot on test paper around which the air passes.

by **PAUL W. McCONNAUGHEY**
Section Supervisor
Research Department
Mine Safety Appliances Company
Pittsburgh, Pennsylvania

disodium tetrahydroxyquinone, and then a drop of an acid buffer solution. The amount of lead in the air can be determined by matching the color with a standard color scale.

The red suspension makes it possible to bring the lead sample and suspended material into intimate contact. Lead particles are tightly embedded on the surface of the filter and suspended particles remain there while the solution is pulled through the filter by capillarity. A stain of uniform intensity is then produced when the acid buffer is added.

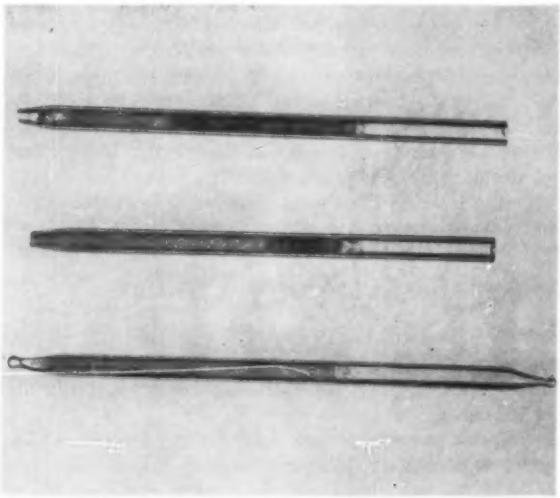

Fig. 4—Hydrogen sulphide detector tubes have silver cyanide impregnated silica gel beds. Stains show H_2S concentrations.

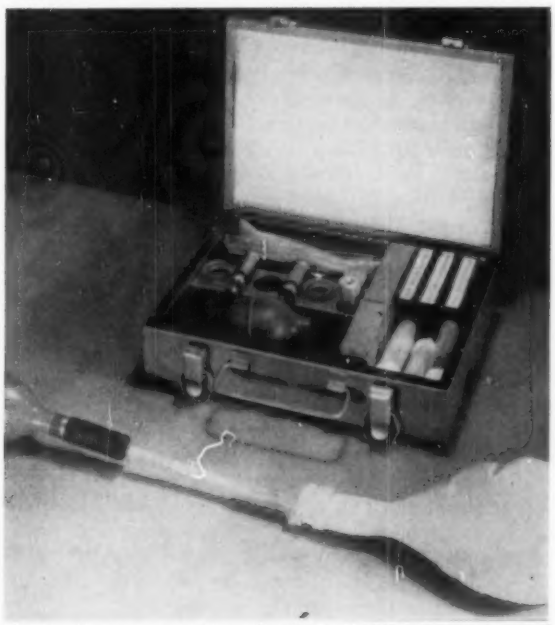

Fig. 5—Carbon monoxide poisoning test kit and one means of drawing measured sample of air through indicating chemical.

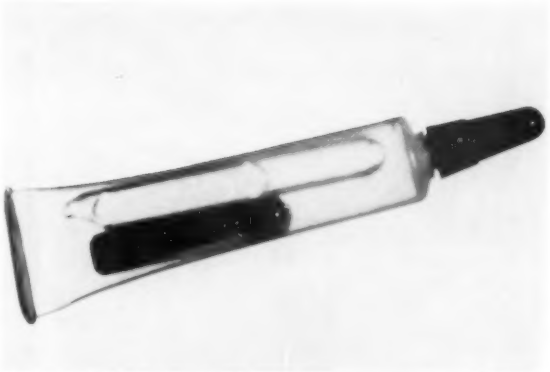

Fig. 1—Plastic reagent holder permits preparation with tube intact. Squeezing breaks ampoules; shaking mixes solution.

No interference has been observed when making this test in the presence of equal quantities of such metals as antimony, arsenic, bismuth, cadmium, chromium, copper, iron, silicon, tin, and zinc. Likewise there is no interference from ions of chloride, iodide, and nitrate.

Arsine in air can be measured similarly in the range of .05 ppm. For this test hydrogen sulfide must be removed from the air by a prefilter impregnated with lead acetate and glycerine, a moistening agent. A known volume of air is passed through a filter newly impregnated with silver nitrate solution. A drop of sensitive developer, a dilute solution of ammonium hydroxide, produces a stain that can be evaluated with a standard color scale.

Hydrogen fluoride in air can be detected quantitatively in concentrations of 0.5 to 5 ppm by a spot test procedure. A measured air sample flowing at a fixed rate is impinged against filter paper freshly prepared with a drop of a suspension of dimethylaminoazophenyl arsonic acid—zirconium oxychloride in alcohol, hydrochloric acid, glycerine, and water solution. (See Figure 3.) In this test the sample volume required to produce a color of fixed intensity indicates the concentration of hydrogen fluoride. For example, a test for 3 ppm of HF, the allowable limit, requires three aspirations of the bulb to match the color standard. With less HF, more aspirations would be required.

Hydrogen sulfide in air may be determined quantitatively by a black stain on silver cyanide impregnated on pumice or silica gel and confined between two porous plugs in a glass detector tube. Quantity is generally indicated by the length of stain produced after a specified time during which the air sample flows through the tube at a fixed rate. (See Figure 4.)

Tubes of this type are available also for **mercury vapor and nitrogen dioxide.** Mercury vapor in air forms a red stain with cuprous iodide and glycerine impregnated on silica gel to form a greenish blue stain. Standard volumes of reagent, per cent of impregnation, sampling rate, and tube diameter assure uniform test conditions for evaluation of the stain.

Detectors for **hydrogen cyanide, sulfur dioxide, and aromatic hydrocarbons** require reagents that remain stable only a short time but can be made up readily from two components that are separately contained in glass ampoules. For HCN the detector is o-tolidine

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sand and copper sulfate-glycerine silica gel, which is changed to greenish blue.

For SO_2 the detector is tetramethyl-diaminodiphenyl methane sand and iodine silica gel, which has a blue color that is bleached to white by SO_2. For aromatic hydrocarbons a mixture of paraformaldehyde sand and concentrated sulfuric acid silica gel is the indicating chemical. A dark brown stain is formed with aromatic hydrocarbons. The length of the stain shows the concentration of toxic material in the air.

Color changes occur in the whole bed of indicating chemical in another type of detector tube. A typical example is the colorimetric tube developed by National Bureau of Standards for **carbon monoxide.** Color graduations from yellow through green to blue indicate CO quantitatively in a palladium molybdate reagent. (See Figure 5.)

Uniform color change over the entire bed requires relatively incomplete absorption. About 20% of the CO in a sample is absorbed and 80% goes through unchanged. The sample volume taken at a fixed flow rate actually determines the concentration of CO by the time of exposures of the indicating chemical. This type of tube is more specific with a layer of silica gel on each side of the indicating gel to remove interfering materials.

These methods and procedures are typical of colorimetric detectors for field use. The selected chemical reaction and the allowable limit value of the toxic material to be detected generally dictates the procedure used.

Pictures by courtesy of Mine Safety Appliances Co.

Noise Control Conference

(from page 43)

ditioning and ventilation systems, high frequency lighting equipment, air duct terminal devices, communication systems, business machines, etc., in all types of buildings.

Open to the general public as well as to BRI members and guests, this conference will bring to the platform a number of experts on the effect of noise on people, the transmission of noise in and through various building components, types of machinery noises and their control, etc.

The Building Research Institute, which is a unit of the Division of Engineering and Industrial Research of the National Academy of Sciences-National Research Council, conducts an average of three to four such research correlation conferences annually, with subject matter dictated by the desires of the membership. Members of BRI are architects, engineers, builders, contractors, building owners, manufacturers of building materials, and others interested in the science of building. Additional information about the conference on Noise Control in Buildings and complete program and registration forms may be obtained by writing Harold Horowitz, BRI Technical Secretary, 2101 Constitution Ave., Washington 25, D. C.

Illness Costs Industry 2 Billion

Worker absence due to illness is costing private U. S. industry $2 billion annually in production time alone, and respiratory and intestinal disorders head the list of ailments.

This is brought out in a study by the American College of Radiology, Chicago, to help determine more accurately the extent of diagnostic x-ray work in revealing such ailments as TB, heart and gastrointestinal disorders and cancer among workers during pre-employment and on-the-job examinations.

"Pre-employment examinations in all areas of industry often reveal ailments that the employee himself is unaware of, and in such cases he is referred to his family physician," maintains Dr. Robert D. Moreton, Fort Worth, Texas, a Chancellor of the College, in commenting on the survey. Dr. Moreton, a Physician who specializes in radiology, also serves as a consultant to the Medical Director of two railroad companies and a large utility company. In this capacity, he reviews many chest x-ray films taken during pre-employment physical examinations.

Prolonged illness, those involving at least four weeks' absence from work, strike all employees at the rate of about 39 for each 1,000 on the payroll annually, the study shows. Production lines are the hardest hit.

One-day absences have made up a smaller portion of the total absences with each successive decade, while long-term absenteeism has increased.

Dr. Moreton said that respiratory diseases account for approximately half the total absences while gastrointestinal disorders account for slightly more than one-fourth. Cardiovascular or heart ailments are responsible for less than 2 percent of the cases but do contribute a substantial proportion of the total hours lost.

Because management is realizing the value of workers' general or non-occupational health needs, Moreton said, there is a strong trend toward providing more preventive care to the employee.

"The logical emphasis in industrial medicine, which for all practical purposes first became an integral part of industry at the turn of the century, is on health maintenance through preventive, constructive and educational services," the College official declared.

Because of this, he said, radiology, especially diagnostic radiology, is particularly important, since the diagnostic radiologist can discover many ailments at an early stage. Therapeutic or curative medicine, he noted, is handled individually by the patient's personal physician.

With the decreasing incidence of TB in the young and its increasing incidence in older people, plus the dramatic increase in the incidence of cancer of the lung—especially after age 40—the chest x-ray has become an increasingly valuable tool for screening older citizens. It is the only way of detecting pulmonary cancer at a stage where surgery or radiation may still be effective, the study points out.

It has been found economically and technically advisable to have qualified local radiologists cooperate in these health programs. As a rule, radiographs of higher quality are obtained, as well as valuable information from their interpretation. At times these radiographs call attention to shadows or previous studies not noted by the second examiner, and allow a double check of the radiographs which leads to a more accurate final opinion or classification, Dr. Moreton points out.

The study indicates that the average absence from work, due to prolonged illness, is a little more than 10.8 weeks. This means a national annual loss of 453,000 man-hours. The rate of absence rises in proportion to age and it is also greater among women than men, greater among production workers than salaried personnel.

On the other side of the ledger, Dr. Moreton said the value of periodic physical examinations for the executive have become so self-evident that most big U. S. companies now have executive maintenance programs.

Because of industry's big investment in the executive, it is expending a great deal of effort to keep him healthy.

The boss tends to overreach, overwork and overlive, Dr. Moreton declares, and when he relaxes, he plays too hard, eats and drinks too much. But some doctors are even more concerned about lower echelon employees who take on extra jobs in off-hours to supplement their incomes.

"The single most important part in a constructive industrial health program," Dr. Moreton concludes, "is the medical examination which, in addition to x-ray, should include at least hemoglobin and urine tests."

The American College of Radiology is the largest radiological organization in the world and is composed of radiologists—physicians specializing in the diagnostic and therapeutic use of x-rays, radium, and other radioactive substances.

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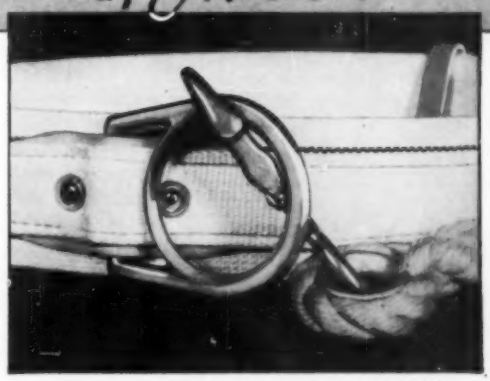
New DEEsign for INDUSTRIAL BELTS by Miller!



The new MILLER Circle Industrial DEE (MCID), together with the MILLER overlapping snap, now eliminates all snap "roll-out" hazards and makes it possible to snap direct to the Dee. There is no need to loop the rope or splice the lanyard to the Dee—ask for complete details.

WRITE DEPT. 557
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FRANKLIN, PA.
In Canada SAFETY SUPPLY CO., TORONTO
(For details, use Key # Y-14 on card on page 1)

IMPROVED DUST COLLECTORS

Torit Manufacturing Co. has announced conversion of its cyclone separator-type dust collectors to radial fans. The fan change will give increased performance on all models, the company said, because the radial wheels move more cubic-feet-per-minute of air and operate efficiently against higher resistances (static pressure). In addition, the new fans eliminate build-up of foreign material on the blades in unusual situations where conventional fans might become clogged.

Models are recommended for use where large volumes of dust or where lint and buffing compounds must be collected. In operation, dust-laden air is drawn into the collector, where spiral baffles direct it into a whirlwind motion. Dust particles are precipitated out of the air stream by centrifugal force and settle into the dust reservoir below. Operations have shown that in many cases more than 95% of the dust, lint, chips and shavings are collected in this way. The remaining, ultra-fine dust can be exhausted or trapped in after-filter bags. Units are adaptable to service one machine or a group of machines. This eliminates expensive installation costs and gives added flexibility in adapting dust collectors to the changing shop requirements, claims the manufacturer. Dust reservoirs have pull-out drawers for easy emptying and cleaned air is normally discharged outside. Models are also available with cloth after-filter bags or disposable glass wool pads when heated or conditioned air is to be recirculated.

For details, use **Key # DC-1** on inquiry card on page 1.

GAS SAMPLING AND ANALYZING SYSTEM

Hot, dirty exit gases up to 3200°F are continuously sampled, cooled, washed, and analyzed for oxygen and combustibles content by a new gas analysis system available from the Bailey Meter Co. System analyzes the exit gases from combustion equipment such as cement kilns, glass tanks, atmos-

(Continued on the next page)

DUST & FUME CONTROL DEVELOPMENTS

phere generators, open hearths, and boiler furnaces.

Completely enclosed in one cabinet, the analysis system contains: a gas pump, washer, separator trap, electrical switch gear, and the gas analyzer. Transfer valves also included if multiple point sampling is required. May be installed outdoors as well as indoors.

For details, use **Key # DC-2** on inquiry card on page 1.

HIGH-VELOCITY ELECTRONIC PRECIPITATOR

A new high velocity electronic dust precipitator has been introduced by the American Air Filter Company, Inc. The "Electro-cell" unit is now offered in a new design to operate at face velocities of up to 600 feet per minute. Efficiency and compactness have been improved. The actual size reduction is 30% in face area and 50% in cubic requirement. In addition, the new unit is 16% shallower than older high-velocity units.

The precipitator features sectional construction for ease of assembly. Individual cells contain positive and negative collector plates fixed in position. Each cell has its own set of vertical ionizing wires. This construction eliminates a separate ionizer section. The initial cost is said to be lower.

The aluminum collector cells are available in heights of 16″ and 20″, and widths of 24″ and 36″. Cell capacity ranges from 800 to 2750 cubic feet per minute. Collector plates are designed for minimum depth and minimum spacing between surfaces. Power requirements have been reduced. Collection efficiencies of up to 97% are obtainable, as measured by the U. S. Bureau of Standards test method.

For details, use **Key # DC-3** on inquiry card on page 1.

CHEMICAL OVERCOMES ROAD DUST

An inexpensive chemical preparation for overcoming dust on unpaved parking lots, driveways, road construction projects and other locations is now available from the American LaFrance Corp. The product, called "Pentrate," is a liquid chemical which has the unique property of increasing the wetness, or penetrating power of ordinary water. One part poured into 500 parts of water furnishes a working solution.

According to company chemists, treated water is quickly and evenly absorbed into the dirt surface where it forms a moist protective layer which prevents the rise of the dry dust beneath it. The chemically treated water does not lie in irregular pools on the surface, as plain water ordinarily does. Comparative tests made on road construction projects, where severe dust conditions are common, shows that "Pentrate-treated" water is easier to apply, longer lasting and more effective than calcium chloride.

For details, use **Key # DC-4** on inquiry card on page 1.

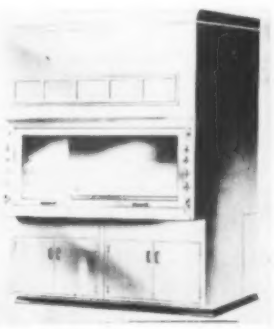
FUME HOOD FOR LAB SAFETY

The new "Fisher AirFlow Fume Hood" features curved vertical panels and a horizontal deflector vane at the face of the 6-ft-wide hood to admit air in a smooth, unbroken pattern. This "air flow" feature of the new hood enables it to operate with equal safety at one-half speed. The air foil across the front directs incoming air across the work surface and sweeps fumes back to the lower baffle opening. The 1″ air space between the air foil and ledge of the work surface is open, to assure constant air flow.

Most important of all, a "bypass" grille at the top of the face assures that the hood cannot be starved off when the sash is closed. This bypass also controls the maximum air velocity through the face of the hood as the sash approaches the closed position, enabling it to withdraw a constant volume of air. The bypass is automatic.

The "AirFlow Hood" operates on 115-volt 60-cycle a-c, is 108″ high, 72″ wide, 37″ front-to-back, with a totally enclosed ¼-hp 860-rpm motor-&-blower set capable of moving 870 cu ft air/min against ¼″ static pressure. The work surface is 1¼″ thick, synthetic Kemstone with a fitted 3″ x 6″ sink; the counterbalanced sash is ¼″ safety glass; and there is a two-tube fluorescent light. Mounted on the vertical face panels of the hood are 8 eye-level remote controls for the service fixtures and 4 outlets for 115-volt a-c, 2 for 230-volt a-c. The hood's base has two roomy cupboard units with adjustable shelves. Available direct from stock from the Fisher Scientific Co.

For details, use **Key # DC-5** on inquiry card on page 1.



DIESEL EXHAUST CONTROL

The Independance Chemical Co. has developed an exhaust-purifying device called, "Nodorizer," and a chemical compound, "Dieseleen," which neutralizes the unburned hydrocarbons and re-odorizes diesel-truck exhaust fumes with a clean fresh-air scent. The device takes pressurized air from the engine "wind-box," forces it through a chemical compound, and then the force of this air stream injects the chemical into the exhaust pipes to effect the "new smell" in diesel exhaust fumes.

The chemical compound, "Dieseleen," contained in the unit, acts as a neutralizing agent by reacting with the uncombusted byproducts that cause odor and irritation. The exhaust stream is re-odorized to give it a clean, fresh smell. The unit is said not to reduce engine power and is effective under heavy acceleration. It eliminates the need for unsightly stacks up the truck cab side. The entire system is said to be installed and recharged easily, is economical and efficient to operate.

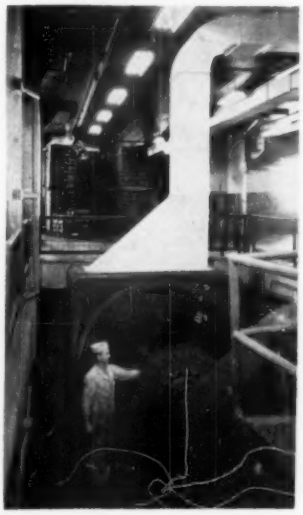
The company also states that the system is effective on stationary engines and other diesel powered equipment that is designed to be used within a relatively limited area. Such applications might include refinery equipment, materials handling equipment, marine and train engines, etc. Particularly suited to commercial and industrial diesel trucks.

For details, use **Key # DC-6** on inquiry card on page 1.

HIGH EFFICIENCY AIR FILTER

High-efficiency, air filters are now avaiable from Wheelabrator Corp. to help reduce the maintenance expenses associated with the operation of motors, controls, instruments, etc., housed in or adjacent to manufacturing facilities. Operation utilizes a cloth-type dust collector. Cloth filtering bags are treated with a special filter aid that enables them to remove above 99% of all the impurities contained in normal atmospheric air in motor rooms, laboratories, control rooms, etc.

In most cases air is obtained from outside the building and passed through the "Ultra-Filtration" col-



lector prior to being supplied under slight pressure. In this manner, if there are any leaks, clean air will leak out. The efficiency of these collectors is claimed to be at least 25% greater than viscous and electrostatic types. Another important feature is that they are practically maintenance-free. The filter aid is easy to replace and will last from six months to over two years, depending upon the application, and not require frequent inspection. They are currently in use in the mining, chemical, rubber, steel, and pharmaceutical industries.

For details, use **Key # DC-7** on inquiry card on page 1.

GAS IONIZING INSTRUMENT

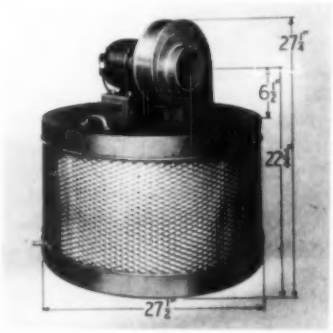
Continuous measurement of minute traces of toxic gases and vapors in air or process streams has been made practicable for air pollution studies and process monitoring by a new gas ionizing instrument offered by Mine Safety Appliances Co. A range of a few parts per billion to parts per million of a large number of gases and vapors can be indicated and recorded. Principle of the instrument is electrical measurement of decreases in the conductivity of gas samples in an ionization chamber, caused by removal of ions by the contaminant being measured. Continuous ionization is caused by a radioactive material in the chamber.

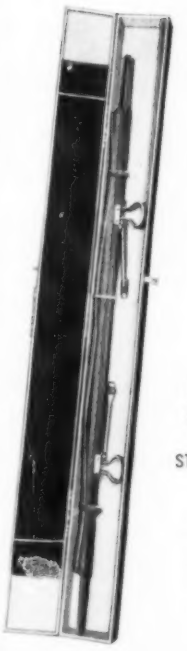
Gas to be detected enters the chamber with a sensitizing reagent with which it reacts chemically to form particles, or, if the gas is electronegative it can be measured in a background of a non-electronegative gas. Selectivity is provided by use of various sensitizing reagents or mechanisms. Such gases as ammonia, carbon tetrachloride, hydrogen cyanide, trichlorethylene, and various amines have been measured in low concentrations. The instrument is sensitive to acid gases such as hydrochloric acid vapor, hydrogen fluoride, sulfur dioxide, and nitrogen dioxide; to alkaline gases such as ammonia, hydrazene, and amines; and to halogenated hydrocarbons such as ethylene chloride, and ethylene bromide. It is also sensitive to some insecticides. Insecticides must contain ingredients that can be reduced or converted to one of the classes of vapors named above.

Accuracy is provided by a com-

pensated detection system incorporating two ion chambers, one with a reagent or converter and the other with parallel flow of untreated sample gas. The number of ions present in the detector chamber is independent of flow rate. The two chambers are series arms (10^8ohms each) in a Wheatstone bridge the other two series arms being a 10-megohm potentiometer. Bridge balance is measured with an input impedance voltmeter. A bridge voltage of 22½ or 45 volts full scale may be used with an indicator span of 2 or 20 volts full scale.

For details, use **Key # DC-8** on inquiry card on page 1.





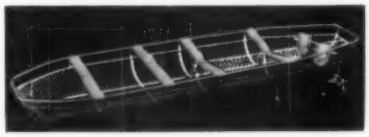
Convenient, Clean, Accessible!

Junkin

STRETCHER CASE & KIT

Junkin Stretcher cases provide a compact convenient place for storing the army type stretcher, blanket and first aid equipment. Protects from dirt and grime — saves valuable space. Available as kit or case only.

JUNKIN SPLINT-TYPE STRETCHER



Rigid construction. Patients may be carried vertically or horizontally, greatly reducing danger of moving from inaccessible locations. Canvas web-straps at chest, abdomen, thigh and calf, hold patient securely.

Send for descriptive literature.

JUNKIN ENGINEERED SAFETY

JUNKIN SAFETY APPLIANCES

3121 Millers Lane, Louisville 16, Ky.

(For details, use Key # Y-15 on card on page 1)

SPARK PROOF FAN FOR MIST COLLECTORS

Aget Mfg. Co. announces the inclusion of non-magnetic, spark-proof fans in their model VCS-2 (illustrated) as well as other models in their "Mistkop" line. Made of hardened, cast aluminum, these fans which cannot attract metal fragments or give off sparks in the event of accidental contact reduce the danger from vapors of a combustible or explosive nature.

The collectors are completely fire-proof. These efficient mist-fog collectors are built to a simplified design consisting of a fan, filter and condensate element. The only electrical power required is for the operation of the motor. No special connections, duct work or piping are needed. Life of condensing material is normally from 6 months to one year. Collectors have suction capacities from 600 to 3600 CFM.

For details, use **Key # DC-9** on inquiry card on page 1.

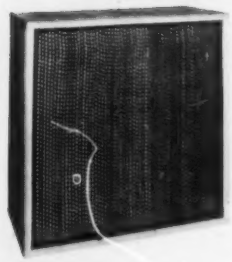
ODOR FILTERS FOR AIR CONDITIONERS

A low cost activated carbon air filter for commercial conditioners is now being offered by Connor Engineering Corp. Recommended for either package or central systems where the air is recirculated with no provision for outside air ventilation, it removes odors from a portion of the recirculated air.

The panel-shaped Type R filter has a metal frame supporting densely packed columnar beds of activated carbon firmly held in wire mesh, interspersed by air bypasses. If fits directly behind the dust filter and is made in the same dimensions as four standard sizes of the latter: 16″ x 20″, 16″ x 25″, 20″ x 20″, and 20″ x 25″, with capacities of 640 to 1000 cfm. At rated capacities resistance is 15 in. w.g. and efficiency 20 percent. For example, a Type R panel installed on a 1000 cfm conditioner will provide 200 cfm of fresh, odor-free air.

In instances where the filter frame of a conditioner will not accommodate both dust filter and panel the latter is made in a smaller size with tabs for external attachment to the frame. Capacity of these units is slightly less. When the activated carbon filter medium becomes saturated, i.e., has adsorbed or soaked up a good proportion of its weight in odorous gases and vapors, it is readily replaced by fresh carbon. Replacement periods depend on the nature of the odors and their rate of generation in the conditioned spaces.

For details, use **Key # DC-10** on inquiry card on page 1.



FIRE-RESISTANT DUST FILTERS

A new filter medium for their "Absolute" Filters has been announced by Cambridge Filter Co'p. This new medium, consisting of a combination of selected glass and asbestos fibers, offers increased filter efficiency and capacity, and fire, temperature, and humidity resistance. Minimum efficiency is now 99.97% based on removal of 3.3 micron diameter particles. The rated capacity of the 24" x 24" x 11½" size at 1" w. g. resistance has been increased to 1100 cfm. This increase permits savings in the number of filters required for an installation as well as in the space required.

The use of asbestos fibers improves temperature resistance. Inorganic fibers assure the moisture and mildew resistance of the new filter medium to withstand 1000° F and 100% relative humidity. Filter construction has been modified to increase the number of pleats and incorporate over 200 square feet of filter media in the new filter.

"Absolute" Filters were originally developed for removing radioactive particles in A.E.C. plants. They have been used by leading pharmaceutical companies to remove bacteria, viruses and other contaminants from the air supplied to sterile areas; by the film industry to remove even the finest particulate matter; by many other industries, for applications such as in "dust-free" rooms, in critical assembly areas where precision machinery is operating. They are also used in such less critical areas as plastic molding, food plants, the brewery industry, and laboratory areas.

For details, use **Key # DC-11** on inquiry card on page 1.

MEDIUM DUTY AIR FILTER

A new permanent type, electrostatic air filter for heating, ventilating and air conditioning systems is being put on the market by the Goodyear Tire & Rubber Co. The chief advantage of the new air filter is said to be easy maintenance. Except in cases where unusually greasy dust and soot are encountered, the filter can be cleaned with an ordinary, suction-type vacuum cleaner. Research and development men tested the new cleaning technique with dusts and contaminates common to commercial and industrial areas. It was found that the suction power of electric vacuum cleaners is adequate to overcome the pull of static charges on captured particles.

Called "Pliotron CR," the new filter is a lower priced version of the company's "Pliotron" filter, incorporating major construction and materials changes. The new unit fills a gap between ordinary and heavy duty types. Experience with all types of atmospheric and manmade dust revealed a need for a filter that would solve forced air filtering problems that ordinary filters couldn't handle and which were not critical enough to require a heavy duty type. The complete filter is one inch thick.

For details, use **Key # DC-12** on inquiry card on page 1.

PAINT SPRAY BOOTH

A new spray booth has been introduced by the Schweitzer Equipment Co. The new booth, tradenamed "Hydrex," employs a series of spray jets to create a draft of air through the booth and provide a water mist to precipitate the dust and overspray from the air. Air movement through the booth is accomplished by the jet action of the nozzles. The spray mist mixes with, surrounds and drags down the paint particles, causing them to precipitate. The precipitated overspray is collected in the reclamation chamber, built into the booth, and may be reclaimed by conventional methods. Water for the spray jets is contained in a closed system and circulated by a small pump and motor.

The exhaust blower is completely eliminated; the draft of air created by the jet spray provides adequate air movement. However, in certain cases where paints containing volatile solvents are used, it is necessary to provide special filters to remove the vapors and a small auxiliary fan to boost the natural draft of the spray jets. However, this auxiliary fan is located in the air stream following the cleaning portion of the reclamation system. The problem of paint deposits and other maintenance on the blower vanes has been eliminated by this innovation. In many cases, air used by the booth is returned directly to the room atmosphere, reducing the heating load, or recirculated back into the booth or exhausted to the outside depending on the type of solvent, type of material being sprayed or the amount of overspray, etc. The adjustment of air flow is simple.

Advantages claimed for the new booth include: simplicity of operation; ease of cleaning; high percentage of air and overspray recovery; reduction in heat loss; elimination of stack systems; use as a portable or semi-portable unit, etc. The booth is available in standard sizes

for both hand and automatic spraying. Provisions can be made for conveyors or handling devices.

For details, use Key # DC-13 on inquiry card on page 1.

NEW GAS SCRUBBING UNIT

The "Turbulaire-Doyle Unit," a development of the Consolidated Mining and Smelting Co. of Canada, Ltd., has been made available to American industry by the Western Precipitation Corp. The unit is suitable for separating and recovering dusts, mist and fumes from a variety of gases and can be used with other types of collection systems, if desired. This new gas scrubber is said to be unusually efficient because of its use of a new high velocity impingement principle.

Each inlet duct of the scrubber contains a concentric cone positioned above the fluid level. The velocity of incoming gases is increased by this cone, causing them to reach maximum velocity as the gas meets the scrubbing fluid. The "jet" action that results forces the dirty gas and dust particles into the scrubbing liquid for complete wetting and cleansing. The particles separated in the scrubbing bath are carried away by the circulation of the liquid for collection as a concentrate or slurry. Cleaned gas is discharged through an outlet duct.

The unit can be adapted to meet most corrosion problems found in normal industrial operations. Its rectangular shape and flat-sheet internal surfaces allow mild steel, stainless steel, lead, wood, concrete, acid brick or similar materials to be used in construction. The unit may be lined with a wide range of rubber or corrosion resistant plastics.

Power requirements are said to be low, recoveries of 99 percent at pressure drops of only 10" W. G., 2.2 HP per 1000 CFM of gas, are obtained and liquid requirements are also low with this new unit. Unit has been proven effective in chemical, metallurgical, and waste disposal operations.

For details, use Key # DC-14 on inquiry card on page 1.

Model 8933:
Face spray ring acts simultaneously with eye-wash, sending controlled streams of water from specially designed twin fountain heads.

Provide instant relief with... HAWS
EMERGENCY EYE and FACE WASH FOUNTAINS

Eye and face hazards are inevitable in industry... so take positive steps to reduce the extent of injury and minimize insurance claims. HAWS Emergency Eye and Face Wash Fountains flood contaminated areas with water – instantly ridding face and eyes of caustics, chemicals and dangerous particles. This **instant relief** may well prevent permanent damage – bridging the gap until medical aid arrives. Install extra safety – HAWS Emergency Fountains and Drench Showers.

Write today for detailed information on the complete HAWS line of emergency facilities. HAWS DRINKING FAUCET COMPANY, 1443 Fourth Street, Berkeley 10, Calif.

HAWS

(For details, use Key # Y-16 on card on page 1)

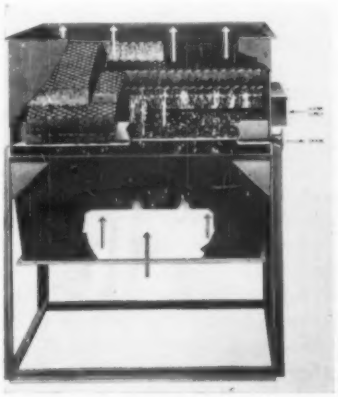
ACID MIST AND VAPOR COLLECTOR

A new "Cycoil" acid mist and vapor collector has been introduced by the American Air Filter Company, Inc. The Type M operates on the principle of counter-flow air cleaning but uses water rather than oil as the collecting medium. It is designed to eliminate acid or alkali mist generated in plating and other industrial processes.

The new unit may be operated either as an exhaust or blow-through cleaner, with the contaminated air or exhaust gas flowing upward through a perforated plate into the eliminator section. This consists of a fluid-bed, polyethylene pad into which water is introduced in counter flow to the air. The moving air causes a liquid level to be established in the polyethylene pad and consequently provides a multitude of flooded contact surfaces for effective scrubbing. Excess water is forced to the sides of the eliminator section to a drain pan. Normal water drain rate is three quarts per hour for each 1000 CFM. A secondary pad removes any mist that may have escaped entrapment in the fluid level pad.

Two basic designs are available. Design 2 has a nominal 2-inch pressure loss with low humidifying efficiency. Design 4 requires a 4-inch pressure drop to provide higher collection efficiency at nearly saturated exit condition. The "Type M Cycoil" is available in seven sizes with capacities ranging from 1200 to 24,500 CFM.

For details, use Key # DC-15 on inquiry card on page 1.



ALUMINUM FAN PROPELLERS

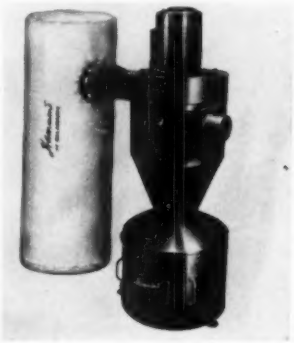
New blades are usful where large volume of air movement is required in mining operations, and ventilating and exhausting in factories, etc. Manufactured by the Kloppenborg Foundry and Fan Co., these fan propeller blades are of one-piece cast aluminum alloy to eliminate the danger of flying apart. They are available in four blades (as shown) and in two blades of similar design, in three sizes–36″, 42″ and 48″ diameter. All blades are balanced and bored to specific requirements–up to 1½″ bore. Standard keyways for bore size requested and two set screws hold blade safely on the shaft. These blades will deliver up to 41,000 CFM at 1750 RPM.

For details, use **Key # DC-16** on inquiry card on page 1.

LIGHTWEIGHT DUST COLLECTOR

A new 53″ high, "Junior Cyclone" DusKolector" has been developed by Hammond Machinery Builders, Inc. The units are available in two capacities, 400 CFM and 600 CFM, and operate on the principle of centrifugal precipitation and gravitation for the removal of larger particles. The latter are deposited in a removable receptable in the base. Smaller particles are exhausted outdoors or trapped in a removable bag attached to the outlet. With this bag style, the air is recirculated and heat is thus saved. The blower wheel is mounted on the exhaust side rather than the inlet side and is a self-cleaning, paddle type, balanced to minimize vibration.

The new unit requires a minimum of floor space and can be "tucked in" almost anywhere. Additional floor space can be conserved by turning bag with the longer portion upward, the bag being supported by a rod. Casters can also be inserted to make the unit portable. 400 CFM models operate on ½ H. P. motor and 600 CFM units require a 1 H. P. motor for collecting dust from light and medium dust creating sources, including buffing, polishing, cast iron ma-



chining, miscellaneous grinding, woodworking, processing of plastics, glass, fabric, leather, textiles, etc.

For details, use **Key # DC-17** on inquiry card on page 1.

NEW AIR SAMPLER

A high-volume airborne particulate sampler, which collects and measures radioactive or non-radioactive dusts, chemicals, and other pollutants from atomic plants, reactors, bomb tests, incinerators, isotope labs, manufacturing plants, and mining operations, etc., is now available from the Nucleonic Corp. of America.

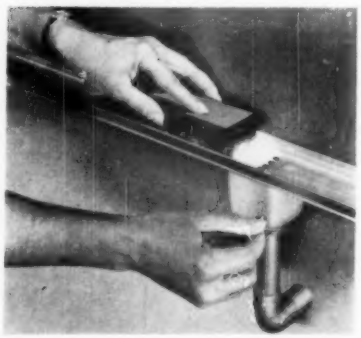
Air sampler model HAS-4 is built around a turbine-type blower and inhales at a rate up to 75 CFM, as measured by a self-contained variable orifice meter. The instrument can be used for random or round-the-clock sampling, indoors or outdoors, and comes with a choice of filters designed for alpha, beta, or gamma counting.

For details, use **Key # DC-18** on inquiry card on page 1.

BUILT-IN VACUUM INLET FOR CHALKBOARD TRAYS

The addition of "Trayvac" built-in vacuum chalkboard-tray inlets to the firm's lines of engineered maintenance appliances is announced by H-P Products, Inc. Designed for rapid removal of chalk dust from trays and erasers before it can contaminate the air or soil the floor, "Trayvac" can be installed on chalkboards in buildings equipped with a central vacuum system. All that is required are flat chalk trays to which the vacuum inlet valves can be connected. For existing buildings not equipped with a central vacuum system, the manufacturer will make specific recommendations.

"Trayvac" was developed because existing chalk trays are difficult to clean, dust is too often spilled on the floor and blown into the air. Once air-borne, the dust creates a cleaning nuisance on walls, floors and furniture, and causes discomfort. With vacuum cleaning, chalk dust is removed at the source before it can become air-



borne. According to the manufacturer, it will end the chalk dust nuisance for educational, industrial, commercial, institutional, governmental users of chalkboards.

For details, use **Key # DC-19** on inquiry card on page 1.

NEW PORTABLE DEHUMIDIFIER

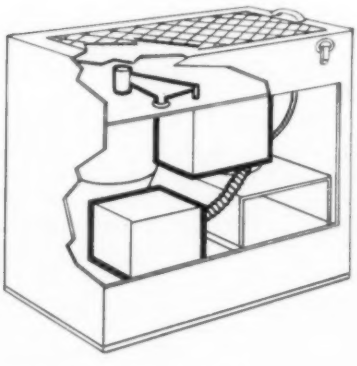
A new portable (on wheels) room dehumidifier, announced by Suttle Equipment Corp., effectively removes two to three gallons of water from the atmosphere every 24 hours. The "Atmo-Dry" con-

tains a removable rust resistant drawer which can be easily emptied, or, a permanent drain can be installed so that no attention is necessary. A Minneapolis-Honeywell automatic humidity control may be used with the unit which automatically turns the unit on or off at a preset desired dryness. Industrial and utility companies find the ease and convenience of "Atmo-Dry" one solution to excess moisture, mildew prevention, or equipment protection from excessive humidity. Unit is low in cost and high in quality in the freon dehumidifier field.

For details, use **Key # DC-20** on inquiry card on page 1.

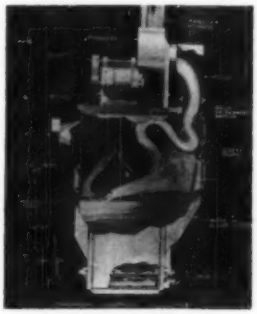
SHAKER SYSTEM FOR DUST COLLECTORS

A new automatic shaker system, for installation with all "Dustkop" air recirculating dust collectors, reduces filter maintenance and replacement to a minimum, according to the manufacturer, Aget Mfg. Co. It is said to be the only completely automatic shaker on the market for unit type collectors, and functions through the shaking action of a patented system of hammers within the collectors.



In smaller models, the single hammer is driven by a heavy-duty solenoid. Hammers in multiple filter models are motor driven. Shaking action starts automatically each time a collector is shut off, which frees the filters from dust and keeps the unit operating at peak efficiency at all times. According to the manufacturer it reduces maintenance by 90%, assures efficient dust collection and maximum recirculation of clean air.

For details, use **Key # DC-21** on inquiry card on page 1.



NEW WET DUST COLLECTOR

Safety engineers will be interested in the new "Ventrijet" wet dust collector built by the Pangborn Corp. The unit mixes water spray with the air stream to permit dust transfer by the movement of air without mechanical means.

Dust laden air enters the "Ventrijet" collector and expands in the inlet chamber at reduced velocity. The heavier particles sink to the bottom of the tank as sludge. The air is drawn through one or more venturi tubes into the discharge chamber. The low pressure area in the venturi throat also induces water to enter the high velocity air stream. The mixing of air and water causes the transfer of dust particles from the air to the water particles. The air, water and sludge mixture impinges at high velocity on special surfaces in the discharge chamber. The sludge settles to the tank bottom. The washed air then flows through an eliminator section for the removal of droplets. Clean air is discharged. The Pangborn "Ventrijet" is available in a range of capacities from approximately 1,000 to 30,000 CFM.

For details, use **Key # DC-22** on inquiry card on page 1.

TEST KIT FOR GAS DETECTORS

A kit for field testing any portable combustible gas indicator to assure readings obtained are accurate has been announced by Johnson-Williams, Inc. The kit utilizes a known mixture of methane and air for checking the indicator's meter. To make a test, an ampoule of methane is broken inside a squeeze bottle. The methane-air mixture is fed into the indicator by squeezing the bottle. The kit contains two dozen ampoules and the plastic container.

For details, use **Key # DC-23** on inquiry card on page 1.

NEW GAS DETECTOR KITS

Two new detector kits are now available from the Mine Safety Appliances Co. One of the new units provides a quantitative method for estimating the concentration of arsine in the air. The arsine gas detector is said to be easy to use: insert a pre-filter disk in the holder and clamp in place; place a test paper in the retainer cup of the pump; add solution and stroke the pump, etc. Kit consists of a pump, filter disks, comparison chart, reagents, etc. M-S-A has also introduced a "Lead-In-Air" detector kit for averting the poison hazards associated with lead and its compounds.

For details, use **Key # DC-24** on inquiry card on page 1.

Moving Men

(from page 13)

couldn't stay in business otherwise.

"There is no minimizing safety in the moving business. We must have men representing us who are as adept at handling bone china as they are in moving a refrigerator."

The school is designed and equipped to give the trainee a complete course in the art of moving household goods. Students receive first-hand practice in loading and unloading furniture, they learn advanced methods of packing, and they are thoroughly schooled in the safe ways of handling a huge tractor-trailer.

The school building itself is a two-story brick structure located within a half-block of the general offies. A five-room laboratory home is set up in the building and is furnished with everything from a baby grand piano to a footstool. Included, too, is a built-in stairway—narrow, steep and with a 90-degree turn—to make it "interesting" for the student mover.

"If there's anything to be dropped or damaged, we want it to be done here," said D. C. Swanner, director of training. "Not in the customer's home. We endeavor through lectures, films, charts, and signs to make the student safety-conscious, and to instill in him the realization that other people's lives and property are at stake."

A moving van is permanently parked adjacent to the building. An opening in the building at that point provides access from the "home" to the rear of the van and enables the school to operate the year 'round. During good weather, trainees are required to spend considerable time loading and unloading through the side door of the van as well.

Driver Training

The complete school course for a mover requires five weeks, with the time divided almost equally between the schoolroom and the highway. The driving phase of the training program consists of three days on a "roadeo" course—where the trainee is held to rigid requirements in handling a tractor-trailer—and the remainder under the wing of an experienced van operator during the handling of an actual household move.

The "roadeo" consists of a series of exercises designed to prepare the driver to meet any eventuality. Although most of those who enroll in the Moving School are experienced drivers, few have had extensive experience in making deliveries in residential areas. They must learn to back into narrow alleyways, handle their tractor-trailers so that they will not impede the flow of traffic, and know how to snake their way through tight quarters necessitated by motorists double-parking in crowded city streets.

Explained Swanner: "A driver of a moving van must get into places where other trucks dare not, because people move from and into some of the most inconvenient places. We first teach the student to back up 200 feet on a straight line. Next we teach him how to park parallel to a curb in a 55-foot space. Then he gets instructions on backing into a 12-foot alley from a 40-foot street. And last is the jackknife exercise which puts the tractor at 90 degrees to the trailer."

The city driving course consists of 18 miles through Indianapolis traffic. There are 32 turns, some of which are very sharp and lead into extremely narrow streets. There are low underpasses to avoid, narrow bridges, speed signs and school zones to contend with.

Success of this driver training program is evidenced by the fact that Mayflower drivers have almost cut in half their accident rate per 100,000 miles since the end of World War II. In 1946 the accident rate was 2.98 per 100,000 miles. In 1957 it was down to 1.51.

In the schoolroom, trainees are given personal instruction in handling fragile items, in loading and unloading major appliances, and also in the back-saving ways of lifting heavy items. They are taught how to use furniture padding and covers to safeguard against scratches and bruises, how to use dollies and hand trucks to best advantage, and how to build special crates and boxes when confronted with unusual shipments (mounted animals, for example).

"There are many ways to have accidents other than that of driving a van," said Swanner. "That's why we teach men to lift with their leg muscles—never to lift when in a strained position. We instruct them to wear proper shoes to prevent falling or slipping on stairways and icy walks as well as protective footwear to prevent foot injury. They are also instructed to wear proper clothing to prevent sunburn in the summer and to protect them from the cold in the winter."

As an integral part of their training program, the trainees are shown a series of instructional films on safety and also listen to several safety lectures given by a representative of the company's insurance carrier.

As mentioned earlier, movers-to-be spend considerable time becoming acquainted with the various

Illustrative of the progress in developing new and better moving materials is this display of the special cartons developed for use during a major move.

materials used in the modern household moves of today. Along this line, the company, in cooperation with the Research and Development Committee of the Mayflower Warehouseman's Association, has adopted the use of a wide variety of specially constructed cartons and cases.

These include clothing wardrobes, mattress boxes, cartons for lamps and lamp shades, and cartons with built-in safety construction for mirrors, pictures and glass table tops. All have been designed with the safety factor foremost in mind, company officials point out.

For dishes, china and other fragile glassware, the company and its affiliated agents throughout the country are now using a method of packing that is probably the ultimate in safety for breakable items. This revolutionary packing method, introduced to the moving industry generally, employs the use of sturdy corrugated cushion wrappers in place of newspaper and excelsior, to provide what packing experts call "the most foolproof method of packing fragile household articles ever devised."

There are three basic forms of packing materials used: (1) the cushion "fly sheet" which is placed between individual dishes or used as a wrapper for small, loose articles; (2) the corrugated wrapper which, when stapled around an article, provides a generous cushion on all sides; and (3) the corrugated pad, which combines corrugated with manila paper and is used primarily to cushion-wrap glassware.

Featured in this new packing method is a compact portable packing table which is stocked with a full supply of packing materials. Some of the deluxe dispenser tables available are built on rollers and can be wheeled up and down stairs with a minimum of effort.

"In this one respect we believe we have reached the ultimate in safety for the goods we handle," said Smith. "And we are constantly striving to improve our over-all safety programs so that we can maintain our record of steadily declining cargo claims and fewer accidents per 100,000 miles.

"We have been successful in reducing the average cost of settling claims and in the frequency of accidents through a company-wide program which emphasizes the fact that safe handling is everybody's business and a responsibility of every department.

Moving instructor gives trainees some expert pointers on the handling of furniture. Opening in "schoolhouse" wall leads to van and enables student to learn his trade throughout the year, inclement weather notwithstanding.

"Safe handling of a customer's possessions begins when our salesman views the goods to be moved and writes the order. The character of the shipment and the pieces in the shipment must be properly described and indicated so that proper protection may be arranged. The next step is the faithful performance of service according to predetermined company standards."

There is a six-point program in effect designed to assure the safe handling of all shipments. This program consists of:

1. The Moving School.

2. A constant search for new and better methods, procedures, equipment and materials with which to protect household goods.

3. Promotion of safety in the handling of vehicles under all conditions. Toward this end, the company participates in the No-Accident Award program of the American Trucking Association, makes monthly and yearly awards to its drivers, and distributes prizes to its drivers for suggestions on safety.

4. Making its contract truckman program more profitable for the purpose of attracting experienced drivers of the highest caliber.

5. Consolidation of departments within the company to achieve a desired centralization of related and interdependent activities under a single responsibility.

6. Regular evaluation of the overall program for the purpose of spotting areas of weakness as quickly as they might appear.

A great deal of the single responsibility mentioned in Point 5 above is centered around Ralph J. Magnus, Mayflower Safety Director. Magnus and his staff compile statistics on the various types of accidents as they happen and take steps to prevent them from re-occurring; they see to it that safety regulations of the Interstate Commerce Commission are closely followed; they conduct regular safety meetings, promote the safety program, and take part in sundry other activities which help to protect lives and property.

At present, the Safety Department is preparing a new safety easel, designed especially to deal with problems which confront drivers in the household moving industry. The new flip chart, which will supplement the National Safety Council's presentation, will include at least one chart for each accident category on the company's driver history forms.

The Safety Department makes regular mailings to all drivers of company equipment. This includes regular company van operators, independent contract truckmen who

haul its trailers, and drivers who are in the employ of Mayflower agents.

A typical safety reminder sent out during the summer, under the department's own special letterhead, cautions all drivers to watch out for vacationing motorists who might be inexperienced in highway driving.

"They (the vacation driver) command greater respect and caution because of their apparent driving weakness," the safety bulletin reads. "The following three rules might help in driving in congested highway traffic.

"1. Control your speed.

"2. Control your temper.

"3. Use extra special caution.

"Remember, vacation drivers have a right to be on the highways; they are relaxing their cares, worries, and business. They are all nice people. Let's remember to respect their rights and privileges."

Pictures by courtesy of Aero Mayflower Transit Co., Inc.

THE POSITIVE
LADDER SAFETY DEVICE

CLIMBING MADE SAFE!

If climber starts to fall, device locks in a notch automatically, instantly. Holds securely. Limits fall to 7 inches.

PREVENTS DEATH AND INJURIES
— FROM FALLING

AUTOMATIC, POSITIVE. Will instantly catch and hold workman if he starts to fall, **even if unconscious.** Requires no attention from climber; he climbs in normal manner. Inexpensive. Easy to install; 3 men can clamp it to ordinary ladder in few hours. Clamps to any rung ladder, peg ladder, pole or framework. No welding or cutting. Notched rail hot-dipped galvanized. Entire equipment rust and corrosion proof. Can be kept free of ice by applying heat inside the carrier rail. In use approx. 10 years. Approved by Safety Engineers and Govt. Agencies throughout country. Patented. Manufactured only by

SAFETY TOWER LADDER CO.
1024 Burbank Blvd., P.O. Box 1052
BURBANK, CALIFORNIA

(Use Key # Y-17 on Inquiry Card on page 1)

inside the trade

THE SHEPARD WARNER ELEVATOR CO. is being merged into the *Dover Corporation* of Washington, D. C., according to an announcement following board approval of the two firms.

The alliance with Dover, whose operating division, the *Rotary Lift Co.* of Memphis, Tenn., also is a builder of elevators, makes the Shepard-Rotary combination the nation's third largest manufacturer of passenger and freight elevators. Shepard Warner will now be known as the *Shepard Elevator Company, Division of Dover Corporation.*

Hugh Allan, Dover vice president and director, represented his company in announcing the merger agreement with Stanley M. Rowe, Jr., who will continue as president of the Shepard Elevator Division.

Joseph R. Hutchinson, former oil plant executive, is the new president of *TRAFFIC EQUIPMENT CO.* of Denver, Colorado, leading manufacturer of traffic barricades, stands, flashing lights and accessories.

Under the new ownership, Mr. Hutchinson will act as president and director of sales. *John Dilatush*, former owner, will continue as general manager of operations. The present dealer organization is being retained with significant additions. A new sales program will feature the versatility of the line.

Appointment of *Jack P. Campbell* as regional sales manager for Canadian operations is announced by *MEDICAL SUPPLY COMPANY*, manufacturers of unit first aid materials for industrial field operations. Campbell was formerly assistant sales manager in charge of first aid sales for Safety Supply Company, with headquarters in Toronto, Ontario. He will continue to be associated with that company since Safety Supply is distributor for Medical Supply Company products in locations throughout Canada.

GENERAL ELECTRIC CO. has announced plans to consolidate its mushrooming communications business in an existing company plant in Lynchburg, Va.

All operations of the firm's Communication Products Department, which now has headquarters offices in Liverpool, N. Y., and manufacturing facilities in Syracuse, Utica and Clyde, will be moved to a facility in Lynchburg which was built in 1956 for production of rectifier equipments and components. The manufacture of rectifier equipments will be transferred to an existing General Electric location in Philadelphia.

A definite time-table has not been established but the Company announced that the moves would begin as soon as detailed planning is completed. They will take place gradually over a period of several months.

General Electric's Semiconductor Department in Syracuse, disclosed that the Communication Products move makes available space at Electronics Park, Syracuse, for the Company's growing semiconductor business.

Thomas H. Thoresen has been appointed Field Sales Manager for *HANNIFIN COMPANY*, Des Plaines, Illinois, a division of Parker-Hannifin Corporation. In his new capacity, Mr. Thoresen will direct all outside sales activities for the company. He started with Hannifin in 1945 as a Production Engineer. He completed Sales Engineer assignments and became Regional Sales Manager of the Cleveland area in 1954. Previous to joining Hannifin, he served with the U. S. Navy as an Engineering Officer aboard aircraft carriers, and was an Assistant Shop Superintendent for the Buda Company in Harvey, Illinois.

Appointment of *C. P. Shaw* as sales promotion manager, *MAINTENANCE INC.*, Wooster, Ohio, is announced by *Robert A. Tissot*, president. In his new post, Mr. Shaw will be in charge of advertising and promotion for asphalt surface seal and related products. He was formerly a sales executive of Industrial Maintenance Co., distributor in Cincinnati. His experience also includes service as vice president and secretary, Stewart & Shaw, Inc., Cincinnati, and assistant executive vice president, Superior Cement Division, New York Coal Sales Co., Columbus.

FINE ORGANICS, INC., has announced that *Raymond P. Wassel*, residing in Chattanooga, has recently been appointed their agent in and for the state of Tennessee. Mr. Wassel, a native of Passaic, New Jersey, completed his college education in the Science Field while serving in the Army of the United States.

The company also announces the appointment of *Karl E. Waters* as Factory Representative for Central and Southern Illinois. He is well known to the industrial trade and has a fine background in

chemicals with E. I. Du Pont Co., and the Glidden Co. Center of the state, Decatur, Illinois, will be headquarters, 1405 West Macon Street, the address.

S. C. JOHNSON & SON, INC., has announced that it has purchased patent rights of Porelon, a new synthetic material which the company said has "abundant product possibilities." Acquired from the Perma Stamp Corporation, the company is investigating the possibilities Porelon offers for new developments in the company's present lines, and also is offering to license other manufacturers who might use it in the development of new products.

Porelon is the first synthetic in which liquid can be contained as it is being manufactured, then given off at a predetermined rate. Marking stamps made of Porelon will give more than 50,000 impressions without being re-inked, he said. Among other product fields in which these unusual properties are applicable are writing instruments, self-lubricating bearings, bandages with "built-in" medicaments, printing rollers and plates, dry batteries and waterproof sheeting that will permit the passage of air.

H. Dean Hyer

Ownership control of the *BONE-DRY SHOE MFG. CO.* has been purchased by *H. Dean Hyer*, general manager of *C. H. Hyer & Sons*, Olathe, Kansas. Bone-Dry, with offices in Neosho, Missouri, and Tacoma, Washington, produces a line of steel-toe safety shoes and boots, which has been distributed regionally in past years. Distribution, Hyer announced, will be expanded throughout the United States and Canada. Mr. Hyer will continue in his capacity as general manager of the Hyer Company, a position he has held for the past ten years.

THE OLYMPIC GLOVE CO., INC. announces the establishment of a west coast affiliate, *Calolympic Glove Co.* with a warehouse and sales office at Riverside, California. This will give one-day delivery to the Greater Los Angeles area, and sharply reduce distribution costs for the West Coast and Mountain states.

Van-Packer Company, Division of THE FLINTKOTE COMPANY, announces the appointment of *Bill Henson* to the post of Assistant Sales Manager. Van-Packer manufactures prefabricated residential chimneys and industrial smoke stacks.

Since 1953, Henson has served Van-Packer as sales representative in its southeastern territory with headquarters in Jacksonville, Fla. He had been associated with Heatilator Company as a sales representative before joining Van-Packer.

The formation of a new company, *BEACON SAFETY PRODUCTS CO.*, to distribute accident prevention equipment in the metropolitan New York and Long Island areas has been announced by *Ted Maslanik*, former sales manager of the W. S. Wilson Corp. Mr. Maslanik has been in the field since 1943 when he was a fire fighting specialist in the U. S. Navy. The new firm, which handles protective clothing and gloves, safety belts, ladders and scaffolding, safety signs, portable fire extinguishers and systems, etc., is located at 128–37 237th St., Laurelton 22, Jamaica, N. Y.

Ellis E. Singer has joined *INDUSTRIAL ACOUSTICS CO., INC.*, New York, N. Y., as manager of the medical department, it has been announced by *Martin Hirschorn*, president. The medical department is responsible for the design, manufacture and sales of the firm's complete line of clinical audiometric examination rooms.

An experienced clinical audiologist, Mr. Singer holds an MA degree in speech and hearing, and is co-author of the medical text book, "Functional Otology, the Practice of Audiology." Before coming to Industrial Acoustics, Mr. Singer was associated with the Beltone Hearing Aid Company as clinical audiologist and director of the audiometer division.

Bernard E. Magette has been appointed general sales manager of *UNIVERSAL MANUFACTURING CORP.*, Zelienople, Pa., producers of galvanized steel scaffolding and materials handling systems for masonry and shoring. *J. A. Kirkpatrick*, president, says Mr. Magette will be responsible for the development of Universal's distribution program, including supervision of sales of scaffolding, mason lift brackets, materials hoists, and tubular materials elevators. Prior to joining Universal, Mr. Magette was sales manager of Resolite Corporation, Zelienople, and previously had been with Somers, Fitler & Todd, Pittsburgh, as manager of its safety equipment department.

As a salute to progressive and service-minded industry on the West Coast, the *American Chain Division, AMERICAN CHAIN & CABLE CO., INC.*, York, Pa., has announced the installation of a

HALCO STRETCHER CANISTER

The Halco Stretcher Canister is the ideal way to store your Stretcher. Made of heavy gauge steel, the Canister when closed will prevent dirt and grime from deteriorating the Stretcher. The Canister is 95" high by 5" wide by 8" deep, and comes finished in white baked enamel.

Write today for literature and the name and address of the nearest dealer handling the Halco Stretcher Canister.

A. E. HALPERIN Co., Inc.
75-87 NORTHAMPTON ST.
BOSTON 18, MASS.

"Your Safety—Our Business"

(Use Key # Y-18 on Inquiry Card on page 1)

Lee Sonic EAR-VALVS
Eliminate the HARMFUL Effects of NOISE to The EAR DRUMS . . .

A FREE 30 Second Demonstration will PROVE this BEYOND QUESTION We GUARANTEE THAT! Remember they are NOT EAR PLUGS! They are scientifically developed sound controls that protect the ear drums without interfering with normal conversation or sound. We'll gladly send you a pair for actual demonstration. THEN you will find out why they are recommended and used wherever NOISE is a HAZARD and a deterrent to normal production. Send for your demonstration pair TODAY on company letterhead. No obligation to purchase.

SIGMA ENGINEERING COMPANY
1491 Vine St., Dept. F-2, Los Angeles 28, Cal.
(Use Key # Y-19 on Inquiry Card on page 1)

Chain Service Station at their San Francisco, Calif., warehouse.

Customers and users of chain for multi-industry application, will be able to keep their current sling chains and assemblies in longer and safer service and, at the same time, realize considerable savings in time and transportation costs. All new and reconditioning work performed in ACCO's service center will be heat-treated to full strengths, proof-tested, and registry certificates issued.

Jim Russo, with more than 30 years of service in the production and inspection of chain, has been placed in charge of the new operation. His services will be made available, upon request, to visit plants in the western United States to make on-the-spot chain inspections and recommendations.

Louis F. Fontana has been appointed a Vice President and the General Sales Manager of *IRVING SUBWAY GRATING CO., INC.*, Long Island City 1, N. Y. Mr. Fontana joined the company in 1930, was made Contract Manager in 1946, and became Sales Manager in 1948.

Mr. Fontana served as President of the National Association of Architectural Metal Manufacturers for two one-year terms, starting in 1956. He is now a member of the Board of Directors of the same organization.

He is a member of the American Road Builders Association, where he has recently been nominated to the Board of Directors of the Materials and Supply Division; the National Sales Executive Club; the American Public Works Association; and the Railroad Club of New York.

Howard A. Freed has been named director of advertising and sales promotion for the *GARLAND COMPANY* of Cleveland, Ohio, manufacturer of over 100 paint and industrial maintenance products. Mr. Freed, formerly assistant vice president and creative director at Allied Advertising Agency, Inc., Cleveland is a 13-year veteran in the advertising field. His new duties bring under his supervision the entire advertising and promotion activities for all of the company's divisions.

Announcement of the appointment was made by *E. F. Wise*, vice president of the firm which was founded in 1895.

Charles E. Beaver, prominent figure in the field of industrial dust collection equipment, has joined *BUELL ENGINEERING CO., INC.*, in a sales and marketing capacity, according to *Joseph A. McBride*, company president. Beaver started as an engineer in the technical department of the Research Corp. in 1925. Successively advancing to sales engineer and assistant sales manager, he finally became vice president of sales and a director of Research-Cotrell, Inc., the company's wholly owned subsidiary. In that capacity, Beaver was responsible for world sales of electrostatic precipitators and mechanical collectors. He was educated at Lafayette College where he received both a B.S. in Chemical Engineering and a Chemical Engineer degree. He is the author of numerous papers and articles on electrostatic precipitators and holds several patents in the field.

FISHER SCIENTIFIC, manufacturer-distributor of laboratory appliances and reagent chemicals, has opened a Greater Philadelphia plant designed specifically for the Turnpike Age. The plant has been located at King of Prussia, Pa., where it is served by a modern system of expressways, including the Pennsylvania Turnpike, with one hour's delivery time from all industrial plants, hospitals, clinics, schools and research institutes in the Delaware Valley.

In addition to its extensive warehouses and offices, the new plant features a service-&-repair department, demonstration laboratory and technical literature section.

Edward Nikoden has been named vice president in charge of sales of the *PARKER SWEEPER COMPANY*, Springfield, Ohio, it was announced by *R. W. Parker*, general manager. The appointment was made during Parker's Diamond Jubilee National Sales Meeting, attended by sales representatives from all parts of the United States and Canada. Mr. Nikoden was formerly general sales manager at Parker, a leading manufacturer of floor sweepers for business and industry.

THE COLSON CORPORATION, manufacturers of materials handling equipment and institutional wheeled equipment, has moved its executive sales offices to Chicago, it was announced by *Norman A. Price*, executive vice president. Headquartered in Chicago will be Mr. Price, *D. F. Adams*, vice president sales, and *A. S. Coorlim*, assistant sales manager. The Chicago office is at 7 South Dearborn Street.

GLENDALE OPTICAL CO., INC., of Valley Stream, N. Y., announces the appointment of *Fibre-Metal Midwest, Inc.*, 7412 S. Harlem Ave., Bridgeview (Argo P. O.), Ill. as exclusive warehouse distributor to service dealers in Michigan, Illinois, Wisconsin, Minnesota, Iowa, Nebraska, North Dakota, South Dakota, Montana, Wyoming and Lake County, Indiana. Fred Bowers is general manager of this midwest warehouse distributorship.

Robert A. Hamen, has just been appointed factory sales representative for *SELLSTROM MANUFACTURING CO.*, Palatine, Illinois, manufacturers of welding and safety equipment. He will cover Michigan, Ohio, western New York and Pennsylvania and the northeastern corner of West Virginia, and will make his headquarters in Pittsburgh. Mr. Hamen has been in sales work for more than 12 years, mainly calling on industrial distributors and manufacturing plants.

Safety Appointments

S. F. Spence of *American Cyanamid Co.* was elected chairman of the *MANUFACTURING CHEMISTS ASSOCIATION's* General Safety Committee.

Mr. Spence, director of Safety and Loss Prevention for Cyanamid, succeeds *G. L. Gorbell* of *Monsanto Chemical Co.* New vice chairman is *J. S. Queener*, manager of the Safety and Fire Protection Division of *E. I. du Pont de Nemours & Co.*

Allan E. Settle has been named Director of Public Relations of the Association, *Gen. John E. Hull* MCA president, has announced. Mr. Settle succeeds George M. Worden, who has resigned from MCA to open his own public relations firm in Washington. Mr. Worden will continue with the MCA in a consulting capacity.

William V. Hayes has been appointed director of safety for the *NEW YORK CENTRAL RAILROAD*, *John F. Nash*, vice-president—operation, has announced. He succeeds *Donald E. Mumford*, who is on special assignment.

Mr. Hayes, held the positions of assistant transportation superintendent and division trainmaster at Syracuse, N. Y., before his present appointment. He started his career with the railroad in 1941 as a stenographer in the freight traffic department at Boston, subsequently holding a number of positions in the New England area, Utica and Albany, N. Y.

Creation of an industrial safety section comprising safety, industrial hygiene and workmen's compensation activities, and appointment of *Jack C. Radcliffe* as supervisor of the new section, was announced by *Robert T. Ross*, manager of employee services for *FORD MOTOR COMPANY*.

Raymond D. Harvey will serve as safety director and *Clarence E. Carothers* will continue to administer workmen's compensation activities, Mr. Ross said.

Prior to his new assignment, Mr. Radcliffe was supervisor of the company's industrial hygiene unit. He joined Ford in that capacity in 1947. Mr. Harvey was elevated from assistant safety director to the top safety post to succeed *W. S. Smith*, who retired August 31 after more than 35 years of Ford service. The new safety director has spent 13 years in safety work at Ford, serving as assistant director since 1954. Mr. Carothers joined Ford in 1930 and has performed various industrial relations supervisory assignments for nearly 10 years.

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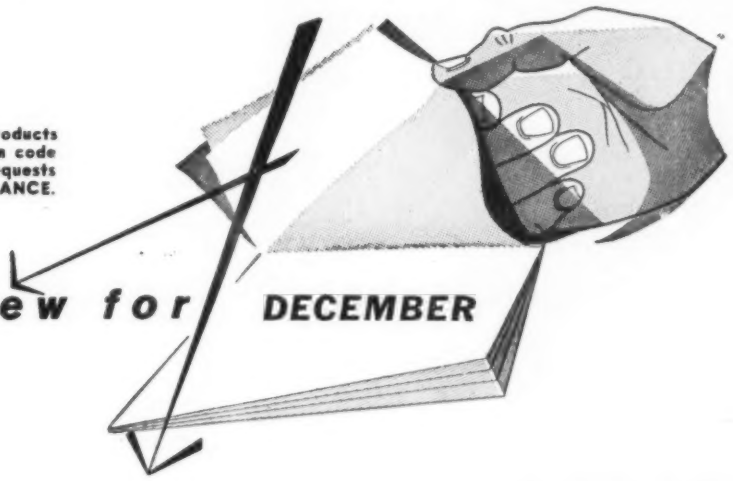
To obtain descriptive literature of products listed, use Reader's Inquiry Card. Write in code number given each item. Send written requests to: Service Dept., SAFETY MAINTENANCE.



what's new for DECEMBER

"AIR-CONDITIONED" CLOSURE BOOT

(Use Key # 667 on Inquiry Card on page 1)

AN "AIR-CONDITIONED" rubber boot with an effective one-button closure is the newest thing in men's protective footwear. The boot, molded in one piece, is made entirely of rubber and has no fabric lining. It will stretch to fit over any shoes, including heavy work shoes, within each size range. The smooth inner surface makes it easy to put on and take off. "Air conditioning" results from design of the boot, which produces bellows-like action with every step. Ridges molded inside assure ventilation and circulation of air.

A button and strap, molded as part of the boot, provide extremely easy closure. The top of the boot is tight enough to keep out snow and loose enough to permit air to be drawn in. The all-rubber construction permits easy cleaning and quick drying.

A choice of two materials is offered in these new boots—conventional rubber for ordinary water or snow service, and neoprene synthetic rubber for use when grease, oil, barnyard acids, or chemicals might be encountered. Neoprene is recommended also for heavy-duty, outdoor wear because of its abrasion resistance and exceptional ability to withstand the effects of sunlight, ozone, and weather. Men's boots, in black only, are 10 inches high and made in four sizes to fit any shoe from 6½ to 13, from the Jingley Rubber Corp.

TRAFFIC CONE BLINKER

(Use Key # 668 on Inquiry Card on page 1)

THIS NEW traffic cone safety device is designed to extend marker visibility to night-time detection and replace presently used, oil-burning lamps. In addition, the new 1958 model features a theft-proof locking device. The unit, which can operate with a flashing frequency of two seconds for 108 continuous hours on four standard flashlight batteries, measures 13 inches from top to bottom. The 2¾ in. dia. light has a built-in, bi-metallic flashing element and is replaceable as is the plastic, "beehive" type lens. The lens is available in either red, amber, white or green. The unit also features a metal body with a red, baked enamel finish and a guarded toggle switch. Visibility is said to be 400 feet. Available from Automotive Enterprises, Inc.

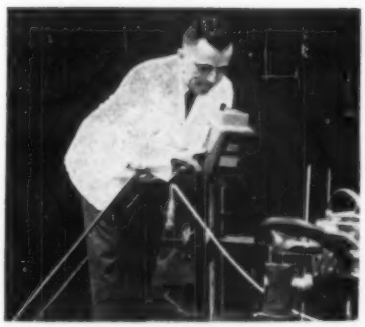
NEW TABLETS STABILIZE INTESTINAL FLORA

(Use Key # 669 on Inquiry Card on page 1)

"LACTINEX" TABLETS, made by Hynson, Westcott & Dunning, Inc., help to re-establish the normal physiology of the intestinal tract in gastrointestinal disturbances and give quick relief from uncomplicated diarrheas, including those caused by antibiotics. The new tablets contain a viable culture of Lactobacilli acidophilus and bulgaricus with the naturally occurring metabolic enzymes that are produced by these organisms. They have a pleasant malt flavor and are said to produce no undesirable side-effects.

Medical reports also indicate that the new tablets will aid in the treatment of painful, ulcerous inflammations of the mouth, such as canker sores. These sores have been associated with social drinking, fatigue, menses, upper respiratory infections, poor nutrition, etc. and at times may account for increased employee absenteeism.

"Lactinex" tablets, of value in all gastrointestinal disturbances not involving surgery, are available in bottles of 50 tablets, boxes of 12 and 1 gram packets.



"SEARCH" METER FOR MICROWAVE POWER FIELDS

(Use Key # 670 on Inquiry Card on page 1)

DEVELOPMENT OF a portable power density meter for survey of high-energy fields near powerful microwave devices is announced by Sperry Microwave Electronics Co., Div. of Sperry Rand Corp. The new device is a simplified "search" meter that directly measures power density of high-level microwave fields such as radar. The new unit is specifically designed for detecting "hot spots" and leakage areas around antennas, transmitter tubes, and plumbing, to establish comfortable working conditions for operating personnel. It gives a continuous direct reading of "true" power density in milliwatts per square centimeter with an accuracy of —0, +2 db. The meter is also scaled in "db" relative to 10 milliwatts per square centimeter, the presently accepted physiological reference level for microwave power fields.

The device was developed to conform with a USAF Tech Order establishing maximum power density levels permissible in working areas containing operating radar devices. The sensitivity of the meter's measurement exceeds power level standards set by the Air Force. The meter is currently being produced in three standardized types to cover frequency ranges in S, C, and X bands. Each type is self-calibrating and battery-operated.

ANTI-SLIP OILS AND GREASE ABSORBENT

(Use Key # 671 on Inquiry Card on page 1)

A NEW type, safe, anti-slip absorbent for oil, grease and water deposits in all types of industrial establishments is announced by The Bares Co. This product, called "Soakup," is reported to be able to absorb 425% of its weight in oil alone. It also has the ability to dissolve residual oil films when water is added to it. The material, an aluminum silica in calcined form, is inert and sterile. It is able to soak up oil, water, grease or acids, and can be swept up immediately after applying to the material to be absorbed. If it is left on the floor, it will not become soggy, heavy or muddy, and is non-slippery and skid-proof with a high-absorption factor.

"Soakup" weighs about 10 lbs. per cubic foot. This permits easy handling, and enables it to be stored in overhead space. It is dustless, non-flammable, and will not deteriorate in storage or after the bag has been opened. It is available in kraft bags weighing approximately 15 lbs. "Soakup" bears the seal of the Underwriters' Laboratory.

ELECTRIC CLOCK WITH ILLUMINATED SAFETY MESSAGE

(Use Key # 672 on Inquiry Card on page 1)

AN UNUSUAL new means of increasing visibility of important safety messages has been perfected by The Electric Neon Clock Co. employing a three-foot, neon-illuminated, multi-colored clock. Due to employee interest in time; clocks are a natural location for safety reminder messages.

The safety message area, lighted by reflection, consists of a 66" shield around the top half of the clock. Space is ample to place letters 4" high. Any message of up to 200 letters and spaces will be supplied by the manufacturer. Safety messages can be read from distances of 300 feet. The units can be used outdoors in parking lots, and in lighted corridors or buildings. Light output of the neon tube rings—one pink and the other white—is said to be 90 lumens and 120 lumens per foot for maximum brilliance without glare.

The clock is fabricated of ⅛" plexiglass with 2⅜" numerals, and is enclosed with a water-tight, plexiglass face. The two neon tube rings flood the dial from the back and side and back-light the numerals. The timepiece is powered by a synchronous 110-volt, 60-cycle self-starting motor. The movement requires no lubrication and operates without attention. Power consumption is about equal to that of a 50-watt bulb. The clock is furnished with an 8-foot cord and bayonet-type mounting bracket. Provision also is made to support the unit from overhead by means of light chain or wire or for free-standing bottom support.

NON-SLIP HEEL & SOLE PLATES

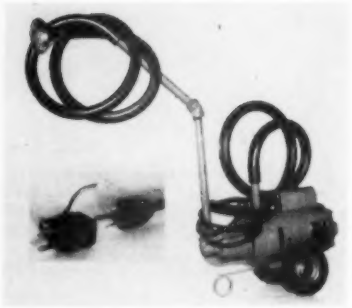
(Use Key # 673 on Inquiry Card on page 1)

STEEL CALKS with tempered steel cross pieces are said to reduce leg strain to a minimum and to prevent slipping and sliding on icy surfaces, etc. Calks allow workers to tread on slippery surfaces without fighting to hold their balance. Gives aching legs and tired feet a rest. These "Norlux" units are flexible and lightweight, designed to fit any size shoe or boot. Calked heel plates use seven ⅜ in. steel calks securely riveted to a 1/16 in. steel plate. Both units may be removed and attached easily. Heel plates are supplied with suitable screws for permanent attachment. Manufactured by the O. A. Norlund Co., the strap-on soles are suitable for repair and utility crews, construction workers, hunters, fishermen, commercial ice-house employees, and others encountering icy conditions.

COOLANT SERVICE PUMP

(Use Key # 674 on Inquiry Card on page 1)

A COOLANT service pump is now available for quick and easy emptying of coolant tanks, to transfer clean coolant to reservoirs, flushing machine coolant tanks and lines, under pressure and as a standby pumping unit. It delivers one gallon of coolant every 4.7 seconds with 25 feet suction lift and pumps grit, metal chips and sludge. Operates on 110 volts, utilizing ⅓ H.P. electric motor for the Mayno, positive pressure, pumping principle. Associated Engineers, Inc. offers this coolant service pump to all machine shops for operational cost savings and efficient performance of this task.



STEEL DRUM HEAD CUTTER

(Use Key # 675 on Inquiry Card on page 1)

A LOW-COST, "Head Cutter," called Model 100, for cutting out heads on "one trip" steel containers has been announced by the Michael A. Schinker Mfg. Co. It is hand operated, portable, light weight, fast and safe. Cutting time for "thin-wall" containers is 2 minutes or less. Secondary bolted, lugged or flanged covers located off center of the main head present no difficulty. Covers of heavy drums require proportionally more time. It will also cut heads out of steel shipping drums, 18 to 22 gauge, 10 to 55 gallon capacity and 10" to 24" diameter.

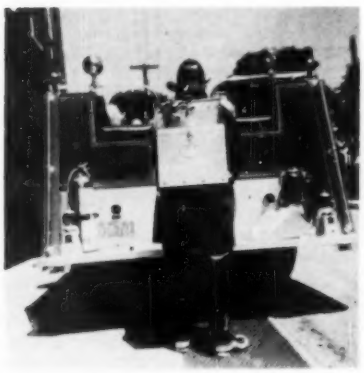
A special feature of the Model 100 is the formation of a safety pressed-in flange, at top of container or drum, made in the cutting operation. This permits drum to be emptied without contents adhering to ragged or saw-tooth crevices. The Model 100 leaves no jagged edges to tear hands of workmen and does not create metal particles which could mix with contents of loaded drums and later damage processing machinery.

The hazard of poisonous fumes or irritating dust caused by agitation of the contents of drums when hammer and chisel are used is eliminated, as in the dangerous situation caused by employing cutting torches on drums which contained flammable materials. Main housing is hard bronze—sparkproof and tough with ample bearing capacity. Cutting action is obtained by actuating 2 ratchet handles which in turn rotate the cutting wheel and knurled anvil shaft. Cutting wheel is easily removed for sharpening and adjusting. Depth of cut can be controlled with an adjusting screw.

PORTABLE CUTTING UNIT & OXYGEN INHALATOR KIT

(Use Key # 676 on Inquiry Card on page 1)

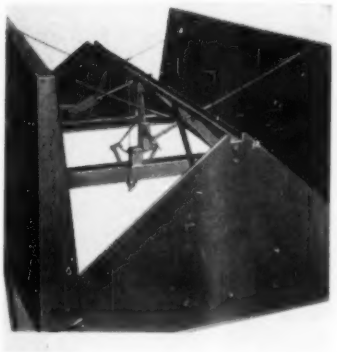
THE "SAVALIFE KIT," a lightweight, compact, low cost, portable emergency cutting outfit with a heavy duty torch for cutting steel and a first aid inhalator that delivers up to 6 liters of pure oxygen is now available from Gas Arc Supply for use by civil defense units, rescue squads, fire and police departments and safety departments of industrial plants. The easily-carried, easy-to-operate unit, housed in a strong, aluminum case, 26⅛" high x 15¼" wide x 7¼" deep, can be used in hard-to-reach areas or in high locations where the weight of a standard outfit would be prohibitive. Sufficient gases are provided to cut up to 1½" of steel for 2 hours and a reserve, "throw-away" gas cylinder is enclosed in the case. The oxygen cylinder can be refilled by any welding supply distributor when the contents gauge shows empty. A deep drawer built into the case holds such accessories as goggles, gloves, spark lighter, wrench, spare tip, inhalator and instruction book, etc. When the top section of the box is removed, 10' of dual hose and the clyinders are exposed, ready to be turned on. A needle valve "take-off" on the outlet of the oxygen regulator makes it possible to use an oxygen inhalator provided with the unit. Goggles have a special split lens, the upper half of plain glass, the lower half of welding glass, thus permitting the operator to work without removing them. Weight of the new emergency kit is only 46 lb.



AUTOMATIC EXPLOSION RELIEF

(Use Key # 677 on Inquiry Card on page 1)

THE "PYROJECTOR," automatic fire and explosion relief unit, has been redesigned with many significant changes resulting in improved operational characteristics, states the manufacturer, The Swartwout Co. Most noticeable is the change from curved to flat dampers, permitting the use of improved insulation. Stronger torsion springs have been added to assure positive opening action even under loads when the fusible link in the triggering mechanism reaches 212° F. New tests show that an explosive force of 10 pounds per square foot will open the dampers, providing 28 square feet of free escape area. In fire or explosion emergencies, the "Pyrojector" opens automatically to release heat, smoke and explosive blasts upward through the roof instead of spreading them outward as a closed roof does. This automatic release greatly reduces plant damage.



LIQUID LEVEL INDICATING SYSTEM

(Use Key # 678 on Inquiry Card on page 1)

ACOUSTICA'S LIQUID level indicating system is finding wide acceptance in many industrial monitoring and processing systems, missile programs, atomic submarines, and high performance aircraft. The system provides immediate switching to initiate warning and control action when there is a change in the surrounding medium on the sensitive probe surface. The system is said to achieve an accuracy and reliability hitherto unobtainable with other devices. The response time of this ultrasonic switching device is twenty-five (25) milliseconds, maximum. The equipment uses an infinitesimal amount of power, is small in size, light in weight and is insensitive to foam, clinging droplets and vapor. Manufactured by the Acoustica Associates, Inc.

NEW POLISHER-SCRUBBER

(Use Key # 679 on Inquiry Card on page 1)

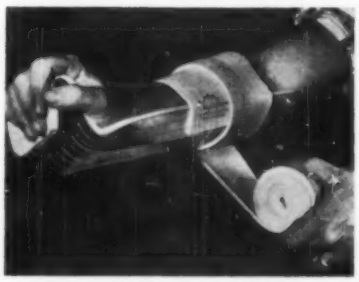
A NEW FLOOR and rug scrubber for small and medium sized buildings has just been introduced by the Hild Floor Machine Company. Model "PRO-13" combines the important construction features and scrubbing performance of the Hild "Deluxe" line in a new low cost 13" machine—designed to make it economical for every building to shampoo their own carpeting. Features include an ½ h.p. motor, helical cut gears, adjustable handle, momentary contact safety switch, etc. Unit can be used for polishing, scrubbing and steel wooling all types of floors.

ALUMINUM AND FOAM RUBBER SPLINTS

(Use Key # 680 on Inquiry Card on page 1)

A USEFUL addition to first aid supplies has been created by Conco Surgical Products. A combination of aluminum and foam rubber, called "Alumafoam," is an entirely new material for finger and fence splints. The splints are packaged flat, ready to be cut and formed to shape in seconds. They eliminate the need for large inventories of individual sizes and shapes.

These splints can be cut with ordinary scissors and formed by hand into any desired position in seconds. They afford protection and immobilization, and the foam rubber compresses and expands to stabilize the splint. They are plasticized for cleanliness. Alumafoam finger splints are said to give excellent results in fractures, dislocations, sprains, and other injuries up to and including the wrist. The fense splints are rigid and strong enough for use on extremities from the shoulder to the wrist, and from the hip to the ankle.

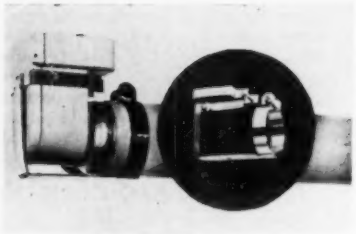


STATIC MEASURING DEVICE

(Use Key # 681 on Inquiry Card on page 1)

A NEW STATIC detecting device capable of measuring charges of virtually any magnitude, has just been announced by United States Radium Corp. The "Ionostat" supersedes the company's earlier static measuring device which was limited to the range from 0-500,000 volts. With the new instrument, the measurment parameters extend from 5 volts to infinity, company officials claim.

Other improvements over earlier models include an adjustable iris diaphragm resulting in reduced maintenance requirements and over-all simplicity in operation. The over-all size of the instrument has been reduced for ease in handling; it measures 11 x 9 x 3½ in, and weighs about 4 lbs. Designed for accurate quantitative measurement of static charges occurring in product or process flows, the unit provides immediate indication of static, simultaneously identifying the charge as positive or negative. The portable unit, which operates on storage batteries, is available with optional attachments which make feasible static measurement in otherwise inaccessible areas.



SAFETY GUARD FOR FLUORESCENT LAMPS

(Use Key # 682 on Inquiry Card on page 1)

THE DANGER of falling fluorescent lamps is said to have been eliminated with a new guard manufactured by the Den-El Equipment Co. The new guard, designed for every type fluorescent lamp, including the new slimline tubes, helps to keep lamps where they belong and to prevent poisoning, injury, lost time, food contamination, and materials and machinery damage. The unit is easy to install—with a twist of a screwdriver. The guards are made of a specially treated, resilient steel which makes it possible for them to be sprung aside for relamping or cleaning.

SNOW SHOVEL SPRAY

(Use Key # 683 on Inquiry Card on page 1)

A LIQUID spray for snow shovels, said to make shoveling easier and faster, is announced by Speco, Inc. Known as "Slikote," it places an invisible coating on the shovel's metal surfaces. Snow will not stick to this or accumulate. In addition, it resists rust and prolongs the useful life of the shovel on which it is applied.

"Slikote" is also recommended for use on power snow throwers and plows. On power-driven equipment, it puts an end to snow build-up on blades and chute. It is claimed to eliminate overloading and prevent subsequent motor wear. It will not damage or stain hands, shoes or clothing.

SAFETY GUARD FOR POWER SAWS

(Use Key # 684 on Inquiry Card on page 1)

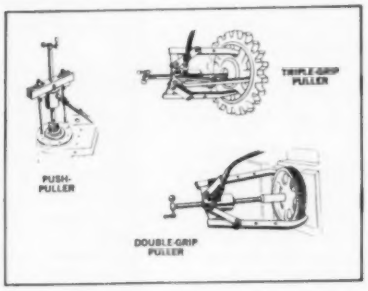
THREE YEARS of experimentation in schools, government agencies, military installations, and industrial woodworking shops in addition to a 12 month test in key industries resulted in the new "Brett-Guard foolproof power see-thru saw guard." It is designed to give protection in the operation of any conventional table saw with blades of six to sixteen inches diameter. A transparent shield of shatter-resistant Plexiglas covers the saw allowing full vision and accuracy in a wide variety of operations. The guard is set into any of three operating positions in extension plates attached to the table top by a flick of the knob. It is capable of providing horizontal and vertical pressure and can be used as an overriding fence for angular work. The guard prevents physical contact with the blade and resists displacement while in use.

A special feature recently inaugurated is the non-fouling spring-loaded anti-kick back device built into the plexiglas shield which increases operator-protection and further protects against all possible injury to the operator. It is designed to dig into the stock in case of a "force back" and prevent harm to the operator. The Brett-Guard Corp. has received official approval of the New York State Department of Labor.

ATTACHMENTS FOR HYDRAULIC JACKS

(Use Key # 685 on Inquiry Card on page 1)

A NEW SERIES of pullers, double and triple-grip; push-pullers; and attachments have just been added to the "Simplex" line of hydraulic jack equipment by Templeton, Kenly and Co. These units are available separately or complete with "Re-Mo-Trol" hydraulic center-hole rams and pumps in 20 and 30-ton capacities. They are designed for removing and installing gears, pulleys, wheels, bearings, bearing sprockets and cups, and axles on practically all types of machinery. The manufacturer claims this new hydraulic pulling equipment is fast, safe, easy-to-use. Because of direct-line pulling through the center hole of the ram, which eliminates



twist action, it cannot slip, wander or gall shafts. Hammering, prying or heating to loosen parts is unnecessary. Attachments include special bearing puller and bearing cup puller engineered for use where double or triple-grip pullers will not fit, or for pulling from blind holes in cramped quarters.

VINYL ALUMINUM COATING FOR WORK SHOES

(Use Key # 686 on Inquiry Card on page 1)

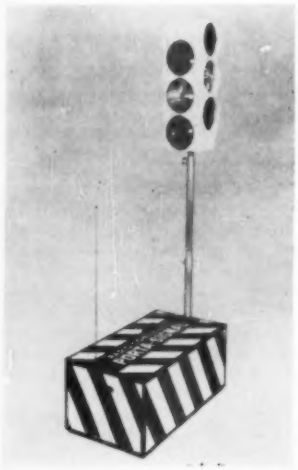
A WORK SHOE featuring a newly developed vinyl-aluminum coated welting is now being marketed by the Hy-Test Safety Div. of International Shoe Co. The vinyl-aluminum coated welting wards off sparks more effectively due to aluminum's heat resistant properties. The welt protection feature increases the wearability and life of the shoe. Tested under the most severe conditions, the safety shoe welting was subjected to the rigorous conditions of a pot room in the Chicago plant of the United States Steel Co. The shoes, known as the "H909 Nullifier," were worn by a moulder and withstood the heat of molten metal splashes. A new version, "Nullifier H909-4," is now offered in welt construction. Also incorporated in the shoe is the company's standard patented, steel box toe.

RADIO-CONTROLLED PORTABLE TRAFFIC SIGNAL

(Use Key # 687 on Inquiry Card on page 1)

DEVELOPMENT OF a portable radio-controled traffic signal is announced by the Porta-Signal Div. of Dryomatic Corp. "Porta-Signal" offers remote radio control and portability in addition to the features of a regular traffic light. A simple setting of switches allows the signal lights to be changed automatically at pre-timed sequences, operated manually by push-button, or set for caution flashing. Radio control at distances of several hundred feet is provided by a seven-ounce pocket-sized transmitter. The battery-powered signal is self-contained in a compact aluminum case which can be carried by hand and acts as a base during operation. The signal head extends to a height of ten feet and is equipped with standard red, amber and green sun-proof lenses.

"Porta-Signal" is designed to provide a dependable, economical and practical solution to temporary traffic control needs. Its versatility allows state, municipal and industrial authorities to cope with such periodic traffic problems as accidents, highway construction detours, public gatherings and rush-hour traffic loads. Other applications include use in classroom traffic instruction and control of vehicular and pedestrian traffic at military installations, industrial plant sites and "drive-in" theatres. "Porta-Signal" can operate in remote locations where power is not available, and will provide long hours of unattended operation for civil defense emergencies, etc.



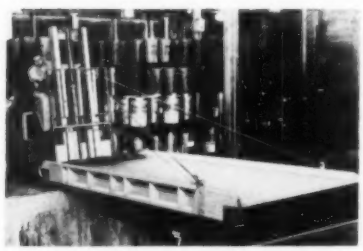
NEW FIBERGLASS LADDER

(Use Key # 688 on Inquiry Card on page 1)

AN ALL-FIBER-GLASS ladder has been introduced by American Allsafe Company Inc. In developing this new ladder, the Company utilizes this light, resilient material in its entire construction, both rungs and siderails being of fiber glass.

It features a specially developed, patent-applied-for method of locking in the rungs which precludes the possibility of their ever breaking loose from the siderails. The company claims that tests show they stand up even when subjected to a static weight of 800 pounds at any point of the rung. Under this locking-in process, it is said to be virtually impossible for the rungs to twist or turn. This new ladder contains no materials that will conduct electricity. Fiber glass ladders fabricated with "Hetron" polyester resin will not burn and will withstand temperatures up to 200 degrees.

At the present time the ladders are being produced in the natural steel-gray color of the material. They can also be furnished in contrasting colors for the siderails and rungs, a feature which should prove practical from a safety standpoint. The product is being turned out in single and extension types with siderails that assure easy gripping. Rungs are rough surfaced to prevent slipping. The spring-loaded locking device used on the extension ladder is said to be the most effective and generally accepted by industry. Hollow tubular construction eliminates considerable weight but provides the maximum of strength without supplementary reinforcing.

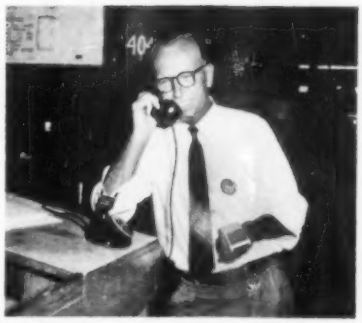


REMOVABLE MAGNESIUM BRIDGES

(Use Key # 689 on Inquiry Card on page 1)

REMOVABLE MAGNESIUM bridges for connecting plant and warehouse buildings, spanning railroad spurs, etc., have been announced by Magline Inc. Made of lightweight magnesium, the bridges do not require power operation or counterbalance devices. According to the manufacturer they are quickly installed without alterations to existing docks and floors, and can be easily removed for railcar spotting. Available in movable, drawbridge and rail-based models, "Magliner" bridges feature non-slip traction surfaces and patented "Tire-Saver Safety Curbs" which prevent truck run-off and tire damage.

The bridges are available in lengths ranging from 10 to 24 feet, in widths of 58 and 70 inches. Load capacities range from 7,000 to 16,000 lbs.



SELECTIVE RADIO-PAGING SYSTEM

(Use Key # 690 on Inquiry Card on page 1)

A SELECTIVE radio-paging system, manufactured by the Stromberg-Carlson Div. of General Dynamics Corp., can be used to locate key personnel wherever they are, instantly, individually and privately. Personnel are supplied with a transistorized receiver to carry in their pocket or clip to a belt or purse. A compact encoder, no bigger than an adding machine, is designed for location near a receptionist, telephone switchboard or some other centrally located spot. This allows an operator to dial the encoder, set a selective signal and set up a call. The encoder can be set to handle 455 receivers and to repeat a signal automatically every 20 seconds. Transmitter operates at 27.255 MC in the Citizens Radio Band. 3-watt and 30-watt models are available.

This system does not require an expensive loop antenna or wires. Paging is said to be quiet—no loud bells or glaring lights to distract or decode. Units can be installed to cover a single building, multi-building plants or extended areas. System also permits multiple paging. As many as four codes may be set up at once. Receivers bear the approval of Underwriters' Laboratories, Inc. for use in Class I, Group D, hazardous locations. Newer models, designed especially for noisy locations, will incorporate a flashing light as well as the audible signal.

NEW SOUND ROOM

(Use Key # 691 on Inquiry Card on page 1)

"MAICO" HEARING AID dealers are now offering the new "250" acousti-room, an audiometric enclosure for industrial and clinical hearing tests, according to Maico Electronics, Inc. Built of special acoustic panels 2½ inches thick, the new room features a patented "Noise-Lock" door.

The telephone-type jack panel includes four jacks for audiometer, earphones and signal light connection. Optional equipment on a new unit includes a forced air ventilator, a 12" folding shelf for either inside or outside mounting, extra windows in wall and door, a 24-inch desk, and an intercom system. The entire room can be moved by fork truck.

PERSONALIZED FIRST AID KITS

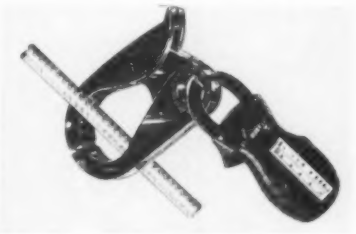
(Use Key # 692 on Inquiry Card on page 1)

A NEW TYPE of first aid kit is being manufactured by A. E. Halperin Co., Inc. The aluminum-drawn and steel-drawn kits have all round corners and are designed for Standard 24 units of first aid supplies. The 20-gauge kits are stamped and drawn with no welded or brazed corners. They have a full piano hinge, rubber gasket, and standard hangers. Kits are available in a choice of colors and can be silk-screened with names or insignia.

AMMETER OFFERS INCREASED RANGE

(Use Key # 693 on Inquiry Card on page 1)

THE AMPROBE "Deca-tran," manufactured by the Pyramid Instrument Corporation, is designed primarily for use with any "Amprobe" where an extension of ranges is needed. No matter which model you presently own, you can use the "Deca-

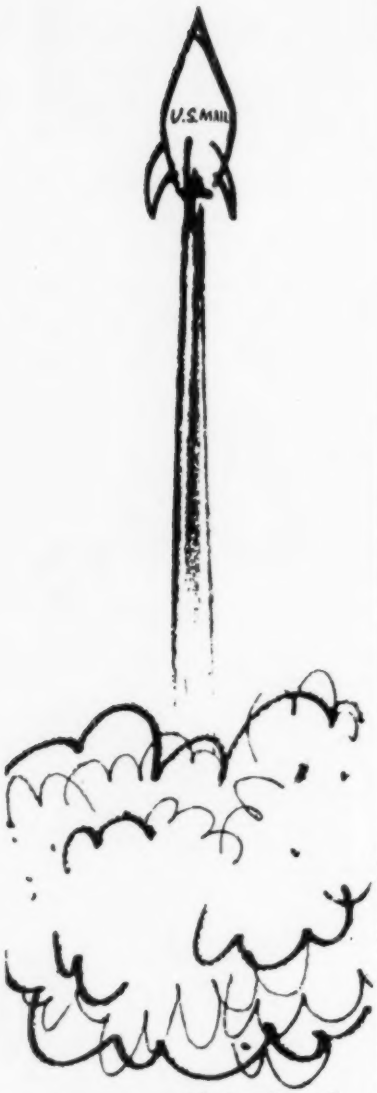


tran" to multiply your unit's versatility by 10. For example, by using the new device in conjunction with your Model RS-1, volt-ammeter you can obtain an actual current reading of 1000 amps AC on the RS-1 range of 0-100. You can take accurate readings on conductors as large as: Round 2 1/16" Dia. Bus Bar ¾" x 2½".

WINTER LINERS

(Use Key # 694 on Inquiry Card on page 1)

A NEW style "Head Snugger" liner affords protection for extreme cold weather. The O-30 design extends inside the wearer's coat collar. Side laps close under the chin. The fit conforms closely to seal out wintry blasts. An outer shell resists wind and is rain proofed. The lining is double napped flannel, insulative and perspiration absorbent. A thin layer of "Thermal Foam" is quilted between the fabrics. The headband of the safety hat may be adjusted upward a one-eighth size marking to accommodate the new liner. Installation is easy—four "Gripper" fasteners. The chin-strap is heavy elastic webbing. For power line workers, three models have new non-metallic fastenings of plastic and molded nylon. There are eight models of "Head Snugger" winter liners and two "Top Warmer" skull cap styles. Available from Kennedy-Ingalls, Inc.



zone mail indeed results in speed

The Post Office has divided 106 cities into postal delivery zones to speed mail delivery. Be sure to include zone number when writing to these cities; be sure to include *your* zone number in *your* return address — after the city, before the state.

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- You get enthusiastic safety cooperation instead of tolerance . . . from every employee . . . every month!

. . . talks the worker's language!

YOUR IMPRINT HERE!

packed with pictures, alive with animated cartoons, touched with humour that gives snap to your message, it makes safety interesting and down to earth. Twelve times a year it covers accident hazards. Across the nation leading industrial firms state it's the only safety paper their employees will read . . . and take home to their families.

It gives the employer the advantages of personal contact . . . saves time and expense. One "lost time" accident prevented . . . more than pays for the yearly cost! Try it . . . it works!

YOUR SIGNATURE HERE!

Make *Your Safety News* your own publication . . . your good will ambassador . . . working for you toward better industrial relations. If you wish, your facsimile signature can be printed here to identify you with the message that gets next to your men and boosts morale.

NOTE: *Your Safety News* is designed to promote better employer-employee relations. Every item is carefully weighed and tailored to this viewpoint!

INSIDE PAGES
(Pages 2 and 3)

THOUGHTLESSNESS IS A THIEF
He'll steal his way into what you're doing, distract your attention and walk off with a finger, arm, eye or foot. Thoughtlessness takes many forms: it may be daydreaming, or worry about some personal problem, or just plain inattention. Anything that distracts you, especially around machinery, is a thief of your personal safety.
PLAYFULNESS IS A PIRATE
He is a deceptive rascal. His hi-jinks may put him in the spotlight, but his practical jokes and showing-off often result in serious bodily injury and even death. And note this: he, himself, has lost a leg! As so often happens, horseplay can boomerang and the practical joker gets hurt too!
What You Should Know About Carbon Monoxide
This is a picture of carbon monoxide gas!
That's right, you can't see it. It's colorless, non-irritating, tasteless, practically odorless, but also deadly.
Here are the symptoms of carbon monoxide poisoning: First, a tight feeling across the forehead, followed by headache, throbbing temples, weariness, weakness, dizziness, nausea, loss of muscular control, increased pulse and breathing; BUT if the concentration of the poison gas is high, there may be loss of consciousness without these warning signals.
Just a few breaths of air containing 1% carbon monoxide can be fatal . . . so can one part of carbon monoxide in a thousand parts of air when breathed for 60 minutes.
It is possible for carbon monoxide to leak inside of a car if there is a loose exhaust pipe or manifold connection, blown-out exhaust gasket, cracked exhaust manifold, or leaky muffler. Play it safe.
1. Be sure your muffler and exhaust are in good condition (they can leak long before they become noisy!
2. Always keep a car window open, even a little, for fresh air.
AN INTIMATE LOOK AT FOUR VILLAINS
SAFETY LAZINESS IS A SIMON LEGREE
If you are lazy about safety rules, then accidents will have the whip hand. We are safety-lazy when we don't bother to use mechanical guards, to take time to get the right tools for the job, to wear protective equipment such as goggles, hard hats, safety shoes, respirators, gloves, etc. Yes, Simon Legree has a whole pack of accident hounds to trail you.
HAZARDOUS METHODS ARE A HOLD-UP MAN
This villain, unsafe work habits, likes to lie in ambush for the unwary. But how do we fall into bad working habits? It may be by trying to cut corners, by wanting to leap to the old way of doing things, or by over-confidence. It's hard for anyone to believe that an accident can happen to him. It's easier to make excuses to ourselves for ignoring safety rules, but alibis only lead us up a blind alley with an accident waiting in ambush.
Two Excellent Reasons
For Wearing Safety Shoes

EMPHASIZES SELF INTEREST

Your employee's self interest in his own safety is always emphasized. Constant safety consciousness is promoted by covering household hazards, transit to and from the job and on the job caution against accidents.

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Artwork is carefully chosen to lodge home each point persuasively. The cartoon style makes YOUR SAFETY NEWS as familiar and welcome as the picture packed Sunday supplement.

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NOTE: Although a personal signature is effective, some firms substitute: SAFETY DEPARTMENT, YOUR SAFETY COMMITTEE, A SAFE WORKER, etc.

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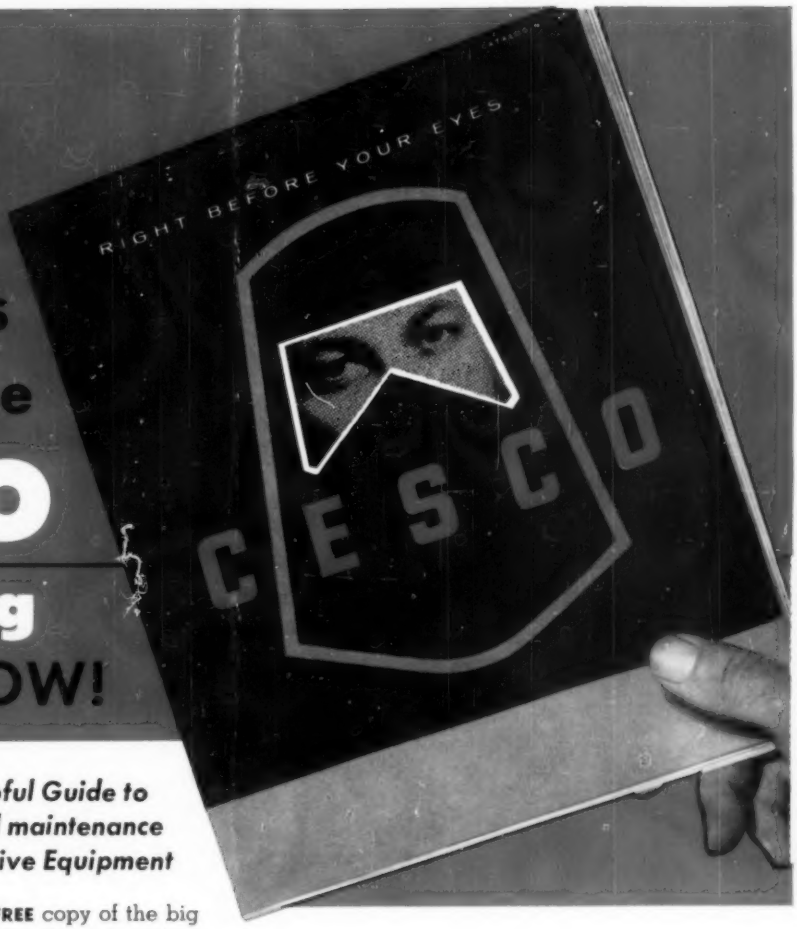

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Industrial Safety Supply Co.
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BOSTON, MASS.
General Equipment Corporation
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BUFFALO, N. Y.
The Watson Company
1443 South Main Street

CHICAGO, ILL.
Universal Safety Equipment Co.
5115 West Diversey Avenue

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Williams & Co., Inc.
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CLEARWATER, FLORIDA
Car-Mad Equipment Company
608 Palm Avenue, Belleair

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COLUMBUS, OHIO
Williams & Co., Inc.
900 Williams Avenue

DALLAS, TEXAS
Guardian Safety Equipment Co.
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Averill Equipment Company
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HOUSTON, TEXAS
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